Town Center Transportation Analysis:
FRIT Redevelopment

Final Draft

Traffic & Transportation Division
May 15, 2003

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City of Rockville

Memorandum

May 15, 2003

TO: W. Mark Pentz, City Manager

VIA: Eugene H. Cranor, Director of Public Works
Art Chambers, Director of Community Planning & Development Services

FROM: Larry Marcus, Chief, Traffic and Transportation Division

SUBJECT: Town Center Transportation Analysis: FRIT Redevelopment

OVERVIEW

The Traffic & Transportation Division has been asked by the Mayor and Council to assess the impact of the proposed FRIT redevelopment on transportation conditions, including intersection capacity, pedestrian and bike safety / accessibility, neighborhood impacts, transit shuttle options, and transportation demand management. This memorandum summarizes the results of the analysis.

Evaluation Methodology

To prepare for other potential redevelopment throughout the Town Center, including the Richard Montgomery High School vicinity, the entire Town Center area was included in the study. Normally for a project the size of FRIT, the study area would be substantially smaller than the 60 intersections evaluated in this analysis.

The traffic analysis evaluated three timeframes: (1) existing conditions, (2) year 2006 (opening day) conditions without FRIT redevelopment, and (3) year 2006 with FRIT redevelopment. This process follows nationally recognized best practices for understanding the base traffic conditions, anticipated growth (including all approved pipeline developments), and the marginal impact of the proposed FRIT redevelopment.

This data complements the Town Center Master Plan analysis for the year 2025, completed in September 2001 (Attachment A).

STUDY RESULTS

Traffic Conditions

Currently, approximately 50% of the intersections within the study area along the MD Rte 355 and MD Rte 28 corridors operate with some delays or under failing conditions. Other corridors and intersections within the study area operate at acceptable levels of service. Refer to Attachments B and C for level of service summaries for AM and PM conditions.

Year 2006 Without FRIT

Year 2006 without FRIT includes all approved developments in the study area plus growth rates in the various transportation corridors. Although it is unrealistic to assume that all pipeline development will occur by year 2006, transportation capacity is reserved for developments already approved in the Town Center. Overall, these developments will generate approximately 2600 AM peak hour and 3200 PM peak hour trips. Additionally, there are other projects throughout the City for which capacity has already been reserved. These projects will generate trips, and though they are not through-trips, they have either an origin or destination point in Rockville. Such projects include the Tower Oaks project, which was approved for approximately 4200 AM peak hour trips and 4200 PM peak hour trips.

As expected, arterial streets will continue to be stressed by the growth in trips not destined for the Town Center. As shown in Attachments D and E, congestion will increase significantly throughout the system, even with the programmed improvements associated with the already approved developments.

In addition to the locations already experiencing problems, many intersections along the Maryland Avenue corridor would experience frequent delays during the afternoon peak period under the projected 2006 without FRIT scenario. While the peak traffic volume flows (i.e., inbound during the morning peak period and outbound during the afternoon peak period) are comparable for both scenarios, the impact is more acute for the afternoon peak period due to the lane configuration along Maryland Avenue (i.e., two (2) lanes inbound versus one (1) lane outbound).

Year 2006 With FRIT

The FRIT redevelopment adds 400 AM and 906 PM peak hour trips to the network. Out of the 60 intersections evaluated, two intersections in the morning and four intersections in the evening experience deterioration in level of service when FRIT is added to the year 2006 forecast. While only these intersections deteriorate by at least one level of service, a number of the remaining intersections in the Town Center are impacted according to the City's Standard Traffic Methodology. Many of these intersections deteriorate by approximately one to three percent.

It should be noted that neither the trip generation rates nor the congestion calculations have been reduced by any "credit" or account for mitigations due to the implementation of a TDM program or proximity to the Metrorail station. Refer to Attachments F and G for level of service summaries.

Traffic Mitigation Proposals

To better accommodate AM and PM peak traffic conditions in the year 2006, the following measures are under consideration:

1. On MD 28, from I-270 to MD 189, use the center turn lane as a second eastbound lane from 7 – 9 AM. Complement this configuration with turning restrictions and pedestrian enhancements.

2. In conjunction with mitigation #1, implement a reversible lane configuration on Maryland Avenue to provide a second westbound lane from the Town Center to I-270 during the PM peak hours. This would add PM capacity to Maryland Avenue and divert trips from MD 28. During the off-peak hours, maintain one lane in each direction to manage the documented speeding problems.
3. Reconfigure S. Washington Street from Vinson Street to MD 28 as a one-way southbound facility. Remove the plug at MD 28 and add a pedestrian enhancement (such as road narrowing) in front of Christ Episcopal church/school. This improvement would facilitate the diversion of overflow trips projected to access I-270 from MD 28 to Maryland Avenue.
4. Other miscellaneous operational enhancements at intersections along Middle Lane, N. Washington Street, and Beall Avenue.
5. Add a traffic signal at Maryland Avenue and Middle Lane.

These improvements are subject to Mayor & Council and MD State Highway Administration (on MD 28) review. The improvements are recommended in order to accommodate growth in traffic attributable to pipeline development and FRIT. FRIT's portion of the mitigation will be determined following acceptance of the overall concept by the Mayor & Council. Attachments O, P, and Q illustrate the improvements.

Traffic Calming

To proactively mitigate new traffic using residential streets (and solve some existing problems), additional traffic calming devices are recommended as part of the mitigation package. Example streets of concern include Baltimore Road, North Horners Lane, Beall Avenue, and South Washington Street. Attachment R displays residential streets that may require traffic calming devices. The FY04-9 Proposed CIP includes estimated funds for a majority of these devices. Transportation staff has been working with community representatives on concept plans for North Horners Lane and South Washington Street. Baltimore Road, from MD 28 to Broadwood, will undergo two improvements in FY04.

Pedestrian Safety

City staff evaluated the quality of the pedestrian system based on three objectives: intersection safety, sidewalk connections, and pedestrian accessibility from neighborhoods to key activity centers (land use and transportation measures).

Existing Intersection Safety

Similar to level of service (congestion) measures at intersections, the City is establishing standards for pedestrian safety. Major intersections leading to Town Center have been rated from excellent to poor. The criteria and ratings are listed in Attachments S through X. Overall, existing intersections in Town Center have an average rating of "adequate". Within the Town Center, the goal is to achieve an average rating of "good" in order to help achieve the City's Master Plan and Town Center goal of being a pedestrian-friendly City.

Year 2006 Intersection Safety Without FRIT

Pedestrian safety ratings do not change for most intersections under the projected 2006 without FRIT scenario. Two intersections along MD 355 (at N. Washington St. and E. Middle Lane/Park Rd.) will improve from "sub-par" to "adequate" due to programmed

improvements. The average safety rating for intersections remains "adequate" under this scenario. Due to the volume of traffic on MD 355, it is difficult, though not impossible, to achieve a "good" rating using the rating system.

Year 2006 Intersection Safety With FRIT

With FRIT redevelopment, pedestrian access to the Town Center increases greatly due to the extension of Maryland Avenue. Three major intersections on Maryland Avenue become pedestrian crossing points. Pedestrian signals, crosswalks, right-turn-on-red restrictions and any other warranted safety measures will be built into the system, raising the average intersection rating from "adequate" to "good".

Sidewalk Connections

The evaluation of sidewalk connections yielded interesting results. Seventy-seven (77) percent of streets in the Town Center Planning area have sidewalks on one or both sides. This ranks tenth of the 18 planning areas, with nine planning areas having higher percentages of streets with sidewalks. With the amount of current and planned pedestrian and bike activity, this earns a "sub-par" rating. The redevelopment project greatly increases pedestrian connectivity with the addition of a grid-like street system and 15-20 foot wide sidewalks. Attachment Y displays the analysis.

Pedestrian Accessibility

The accessibility evaluation findings were quite positive. This measure quantifies the number of residential units within walking distance of key activity centers within the Town Center. Obviously, the more people able to walk to key locations within acceptable times, the better. Variables in the accessibility measure include the quality of the pedestrian system (connections, delays at intersections, etc.) and land use patterns.

Within a five-minute walk of the heart of the Town Center, household accessibility would jump from 257 units in existing conditions to 916 units with approved units plus the FRIT redevelopment. This three-fold increase is consistent with smart growth principles outlined by the State, County and City. Attachments Z through Z8 display the results. Note that the blue buildings represent approved development and FRIT redevelopment is shown in red.

Bicycle Accessibility

As with pedestrians, accessibility to Town Center by bicycle increases with FRIT redevelopment. Within a five-minute bicycle ride to the heart of Town Center, the number of residential units increases from 327 units in existing conditions to 916 units with approved units plus the FRIT redevelopment. Attachments Z9 through Z17 show these results.

Transit Accessibility

An initial study of transit accessibility shows adequate access by transit to the Town Center, particularly by the Metrorailrail station. Pedestrian accessibility to local bus service is generally strong, but with gaps in the Mannakee Street, First Street, and Mt. Vernon Street vicinities. Neighborhoods with less accessibility lack an interlocking street grid system, especially east of the Town Center. Twinbrook also lacks access to the Rockville station, due to its orientation to the Twinbrook Metrorail Station. Attachments Z18 through Z20 present study results.

Shuttle options would reduce wait times for patrons but have only a marginal effect on travel time to the Metrorail station. Attachment Z19 displays the travel times, by corridor, to the Rockville Metrorail / MARC Station. As shown in Attachment Z19, the entire Town Center is within a 5 minute bus ride to the station, using the existing Ride-on / WMATA service. Surrounding neighborhoods can access the station within 10 minutes.

A separate memorandum will be available May 21 with details on the shuttle service study. The study will address the minor service gaps, potential routes to the Town Center and Rockville Metrorail station that address wait time issues, and funding options.

Transportation Demand Management

The goal for the FRIT project is to achieve a reduction of 100% of the single-occupancy vehicle trips taken by employees and residents. In order to achieve this goal, the City has designed a comprehensive program that addresses Transportation Demand Management (TDM), land use, and urban design. The program supports development of pedestrian, bicycle, transit, and carpool/vanpool facilities for accessing the Town Center activity area and other transit-oriented areas.

Program Components

To encourage and facilitate reductions in single-occupancy vehicle trips, the City will implement a TDM program associated with this redevelopment project. The following steps will guide implementation of the TDM program:

1. TDM strategies for residential, office, and retail tenants will be developed. Strategies include, but are not limited to, (a) transit subsidies for employees, (b) a mix of land uses that promotes trips which can be conveniently achieved by walking, biking, or taking transit.
2. Incorporation into all detailed site plans a streetscape and building orientation towards pedestrian, bike, and transit facilities. Building entrances should be oriented towards the street, with minimum setbacks. Bus shelters should also be integrated into the architecture of the buildings and streetscape. Bicycle lockers and racks should be provided (number of which to be determined by City DPW staff) and must be located in or abutting parking garages, at residential properties, and in prominent locations in retail areas.
3. Construction of a bus shelter at Maryland Avenue / Town Square. The shelter should be enhanced with real-time transit information (in coordination with County DPW&T).

Attachment Z21 outlines the concepts and details of the TDM plan.

Summary

City staff identified four main goals in mitigating the additional traffic generated from the FRIT redevelopment: (1) when possible, mitigate new trips which deteriorate the intersection level of service, (2) if the impacted intersection resides close to the Metrorailrail station or provides a critical pedestrian link, substitute intersection traffic improvements with multi-modal improvements, (3) do not move any curbs in residential areas, unless it enhances pedestrian accessibility / safety, (4) minimize the impacts on the surrounding communities.

As a result of the multi-modal transportation analysis, the following projects are recommended to support the projected year 2006 transportation demand. The anticipated demand results from (1) existing conditions, (2) growth in regional travel, (3) previously approved development in the vicinity of the Town Center, and (4) the FRIT redevelopment. Projects necessary due to the FRIT redevelopment are noted (*):

1. On MD 28, from I-270 to MD 189, use the center turn lane as a second eastbound lane from 7 – 9 AM. Complement this configuration with turning restrictions and pedestrian enhancements. *
    a. Remove the eastbound to southbound right turn lane from MD 28 to Great Falls Road to enhance pedestrian safety / access
    b. Restrict left turn movements from Great Falls Road to Williams to eliminate cut-through traffic
    c. Complete enhancements at I-270 / MD 28 / Nelson Street.
2. In conjunction with mitigation #1, implement a reversible lane configuration on Maryland Avenue to provide a second westbound lane from the Town Center to I-270 during PM peak hours. This would add PM capacity and divert trips from MD 28. *
3. Reconfigure South Washington Street, from Vinson Street to MD 28, as a one-way southbound facility. Remove the plug at MD 28, and add pedestrian enhancements (such as road narrowing) in front of the church/school and at MD 28. Restrict southbound movements on S. Washington Street from crossing Maryland Avenue to avoid cut-through traffic. *
4. Add traffic signal at Maryland Avenue and Middle Lane. *
5. Add traffic calming on North Horners Lane.
6. Add traffic calming on Nelson Street.
7. Investigate potential Westmore connection.
8. Add traffic calming on Baltimore Road.
9. Investigate traffic calming options on Beall Avenue.
10. Increase pedestrian and bicycle access along MD 355.
11. Complete MD SHA Town Center Intersection Study.
12. Raise average intersection safety ratings from “adequate” to “good” by adding pedestrian signals, crosswalks, right turn on red restrictions and any other warranted safety measures that should be built into the system
13. Add sidewalk links to ensure sidewalk continuity for pedestrian access to activity centers and transit-oriented areas.
14. Implement a TDM program. *

With the construction of these projects and implementation of TDM strategies, the transportation system will provide adequate traffic conditions and quality transit, pedestrian, and bike accessibility.

Preliminary reviews of this report have yielded additional recommendations from citizens throughout the City. City staff is collecting these recommendations. Generally, concerns focus on the need for a traffic management plan for the construction period, routing trucks away from residential streets. Also, staff has been working with community leaders on concepts for traffic calming devices.

Attachment A: Executive Summary of the Traffic & Transportation Division's Review of the Town Center Master Plan

September 5, 2001

Introduction

With the completion of the draft Town Center Master Plan, the City's Traffic & Transportation Division has been asked by the Planning Commission and the Traffic & Transportation Commission to review and comment on the transportation-related issues in the document. The Commissions and the Division feel that the review is a necessary step in ensuring that the document is consistent with the goals and objectives shown in the proposed Citywide Master Plan Transportation Chapter, and that the Plan represents a concept which functions adequately from a transportation perspective. To accomplish this task, staff prepared this report, which compares projected year 2025 transportation conditions for the current master plan and the proposed master plan. The following section briefly describes regional year 2025 conditions, regardless of growth in the Town Center.

Overview of Future Conditions

Currently, mobility throughout the City is limited due to traffic congestion generated by local and regional trips. Over the next twenty years, the regional population and employment is projected to grow by approximately 40%. Even if Rockville stopped all future growth within its city limits, traffic congestion on the City streets will increase. Regional growth, combined with anticipated development within the City will stress the existing and proposed infrastructure.

The best available tool for assessing mobility issues in a master plan context is a travel demand model. M-NCPPC's model forecasts vehicular and transit travel demand for future scenarios, with regionally accepted land use and transportation network estimates through the year 2025. The City contracted M-NCPPC to apply the travel model, forecasting vehicular and transit demand for both the current Master Plan and proposed Master Plan. A summary of the key findings is contained in the following section.

Findings

Below is a summary of the differences between the current and proposed Town Center Master Plans.

(1) **Finding**: Compared to the current plan, the proposed plan adds 790 households, 3300 office employees, 100 retail employees, 125 other commercial employees, and reduces industrial employees by 160. This translates to approximately 4000 new PM peak hour vehicle trips with an origin or destination to the Town Center.

Finding: Due to the influx of concentrated employees in the proposed master plan, the transit usage by employees increases from 14 percent (existing master plan) to 18 percent. Residents use transit approximately 30 percent of the time when traveling to work, in either land use scenario. This represents the highest transit use by residents and employees in the City, and quantifies the benefits of concentrating development near major transit hubs. The citywide average for residents and employees is 10% and 17%, respectively.

Comment: Strategies to improve Metrorail / MARC Station accessibility – specifically feeder bus and auto (parking) – should be expanded upon in the document.

(2) **Finding:** Regarding year 2025 traffic congestion, 8 of the 13 Town Center intersections incur increased congestion by 1% - 3%. Of the remaining five locations, three intersections possess minimal congestion differences, MD 28 and Maryland Ave. increases by 7%, and Maryland Ave. / Fleet Street increases by 10%.

Comment: The plan should include stronger language supporting large-scale improvements to the MD 355 corridor, such as the deck-over concept under study by MD SHA.

(3) **Finding:** While congestion is slightly worse in the proposed concept plan, average trip lengths for City residents decrease by approximately 10%. This occurs due to the opportunities of jobs and shopping closer to where residents live. However, employees within the City travel approximately 10% longer, due to the slight increase in congestion.

Comment: This finding reinforces the need to create a mixed-use activity center, improving accessibility to shopping and jobs. The mixed-use development should discourage longer distance trips by residents.

(4) **Finding:** Travel times to and from the Town Center would increase slightly under the proposed master plan scenarios, as illustrated in Appendix C.

Comment: The 4,000 additional trips resulting from the proposed Plan make a minimal difference compared to the current Plan, when spread across the City transportation system.

(5) **Finding:** Mobility will decrease regardless of growth in Rockville.

Comment: The urban design of city streets must continue to be retrofitted to provide better mobility for transit users, pedestrians and bicyclists. Sidewalks and bicycle facilities must be safe, connect to activity centers, and be accessible to residents. The transportation system as a whole will need to be improved so that all modes of transportation are accessible and competitive with the automobile with respect to travel time, convenience and cost.

Attached is a "Consumer Reports" scoring system, with a short description, for each applicable transportation objective. The appendices include the background data developed to determine the score. The scores reflect a quality of service rating for each objective, as perceived by the Traffic & Transportation Division. The accompanying text compares the two Town Center concepts. Below are recommendations from the Traffic & Transportation Division, based on a review of the results of all transportation goals and objectives.

Conclusion

The division supports the concepts outlined in the draft plan. It would be easier for residents to find jobs and shopping opportunities closer to where they live under the proposed plan scenario. In either scenario, residents choosing to drive longer distances will experience increases in travel time to their destinations. Facilities such as the Corridor Cities Transitway, Metrorail, and MARC will provide alternatives for employees working in Rockville.

The City must be proactive in continuing to create an environment that does not rely on the automobile for travel. To address this critical issue, the City needs to ensure that the land use patterns, urban design, and transportation system provide its residents with an environment in which goods and services are accessible. Although many roadways will be congested due to regional traffic, proposed land use development in the Town Center, as outlined in the proposed Master Plan, is critical to provide residents opportunities to travel shorter distances to find goods and services. The draft Town Center Master Plan outlines land use patterns and urban design features that will promote such an activity center.

The Traffic and Transportation Commission supports the proposed Master Plan as outlined in a letter from the Chairman of the Commission.

Comparative Analysis of Current and Proposed Town Center Master Plans

The purpose of this study is to provide decision-makers with sufficient information to make educated choices about the future of the Town Center. This document lists the strengths and weaknesses from a transportation perspective. The Traffic & Transportation Division understands that each decision-maker weighs the merits of each transportation objective differently, thus the analysis does not assign weights to each transportation objective. Although a weighting system would provide an overall score for transportation quality of service, it would likely open a debate regarding the perceived value of each transportation objective.

The Draft Town Center Master Plan contains a number of references to transportation improvements related to pedestrians, bikes, transit, automobile, and parking access. To responsibly assess the recommendations, three types of assessments are necessary: (1) a qualitative assessment of conformance with the proposed transportation goals and objectives, (2) use of a travel demand model to assess the balance of land use and transportation, and (3) a feasibility study to assess the viability of the medium scale recommendations (such as new east-west access points). This document contains the first two analyses listed above, the third form of analysis should take place when implementation is considered and funding is available for a feasibility study.

Format of Transportation Analysis

The report summarizes a comparison of the current (1993) and proposed Town Center Master Plans. The comparison assesses the quality of the transportation system by select goals and objectives. The city-wide master plan goals and objectives were designed to assess various transportation applications, including master plan analysis, CIP project implementation, and budget / on-going activities. The mobility (goal 1), accessibility (goal 2), and neighborhood oriented (goals 3 & 5) goals pertain to the master plan analysis at a macro-level scale, and are scored in the report. Development review and CIP implementation will involve all goals at a micro-level scale, due to the improvements to access and mobility, while ensuring sensitivity to safety issues, neighborhood and environmental impacts. The sixth goal, fostering a safety and maintainable system, tracks the quality of the on-going activities funded through the annual budget process.

With regard to the comparison of the two town center concepts, two techniques were applied to score the master plans: (1) a quantitative analysis was performed on mobility related objectives, and (2) a qualitative analysis was conducted to compare the recommended improvements / urban design features of the plans as related to accessibility and neighborhood issues.

The best available tool for assessing mobility issues in a master plan context is a travel demand model. M-NCPPC's model forecasts vehicular and transit travel demand for future scenarios, with regionally accepted land use and transportation network estimates through the year 2025.

The forecasts predict the impact of land use activity[1] on transportation demand. It is important to note that land use and urban design plans throughout the region are not simply input into a travel model. Local government comprehensive planners must predict the amount of land activity that will exist in the forecast year scenarios, in this case 2025. For this modeling exercise, regionally accepted land activity forecasts were applied for the entire region, except for the Town Center, where the Long-Range Planning Division projected new forecasts.

Two important products of the model are PM peak hour vehicular demand for roadways and transit demand by route. The model includes forecasts for roadways ranging from freeways down to collector streets, such as Nelson Street. To create such estimates, other roadway attributes are generated, including congestion speed and community-to-community travel time. These data provide valuable insight as to the general quality of service, but reflect a rather macro-level evaluation of the traffic conditions.

To determine the quality of service differences between the two master plan scenarios, the Traffic & Transportation Division refined the information to estimate the changes in (1) intersection congestion levels, (2) average trip lengths by community, (3) travel time to and from the Town Center, (4) transit use by Town Center residents and employees, and (5) origins and destinations of the users of the major roadways supporting the Town Center. Each of these pieces of information assist in quantifying the quality of transportation service under the two concept plans.

Not all of the transportation objectives can be quantified by a travel demand model, particularly when estimating the benefits twenty-five plus years into the future. However, the guidance documented in the two Town Center Master Plan chapters provides sufficient information to determine the strengths and weaknesses of the future transportation network, particularly for the accessibility and neighborhood-oriented objectives.

The following comparison aims to evaluate or score (according to a scale of excellent, good, adequate, sub-par, poor), elements of the existing and proposed Master Plans according to those transportation goals and objectives that pertain to the Town Center Master Plan.

Policy 1: Enhance the mobility of people, goods, and services.

Recommendation 1: Reduce travel time to activity centers.

- Current Master Plan: Sub-par
- Proposed Master Plan: Sub-par

Based on an analysis of travel time, trips taken by residents of Rockville will be almost 10% shorter under the proposed Master Plan than in the current Master Plan due to a stronger activity center in the town center, whereas employees in Rockville will have an almost 10% longer trip under the same conditions.

[1] The term land activity refers to the amount of households and employees existing in the forecast year, as opposed to a simple zoning designation. The zoning does not generate trips; households and employees have associated trip generation rates.

Recommendation 2: Minimize congestion where appropriate.

- Current Master Plan: Sub-par
- Proposed Master Plan: Sub-par

Under the 2025 proposed Master Plan, there is a 1-3% increase in traffic congestion at 8 of the 13 Town Center intersections. Under the same conditions the percentage of trips with a destination in the Town Center (as opposed to through trips) increases up to five percentage points. While three intersections possess minimal congestion differences, MD 28 / Maryland Avenue increases by 7% and Maryland Avenue / Fleet Street increases by 10%. In an effort to protect the abutting neighborhoods, MD 28 / MD 189 has no plans for lane expansion

		Level of Service		
	Intersection	1998	2025 Current Plan	2025 Proposed Plan
1	MD 355 at Mannakee Street	A-C	D	D
2	MD 355 at N. Washington Street	A-C	F[2]	F[2]
3	N. Washington Street at Beall Avenue	A-C	A-C	A-C
4	MD 355 at Beall Avenue	A-C	A-C	A-C
5	N. Washington Street at Middle Lane	A-C	A-C	A-C
6	MD 355 at Middle Lane	E	F[3]	F[3]
7	MD 189 at MD 28	A-C	F[4]	F[4]
8	N. Washington Street at MD 28	A-C	A-C	D
9	Maryland Avenue at MD 28	A-C	D	E[5]
10	MD 355 at MD 28	D	E[3 6]	E3 [6]
11	MD 28 at MD 586	F	F[3 6]	F[3 6]
12	Maryland Avenue at Fleet Street	A-C	A-C	D
13	MD 355 at First Street	D	F[6]	F[6]

While congestion is slightly worse in the proposed concept plan, average trip lengths for City residents decrease by 10%. This occurs due to the opportunities of jobs and shopping closer the where residents live. However, employees within the City travel approximately 10% longer, due to the slight increase in congestion.

[2] Included in the analysis was an additional lane on the eastern approach and pedestrian improvements will be introduced at this intersection. The intersection will be at D/E limit by 2005.
[3] The State is planning intersection improvements, which may include grade separation. The capacity was not included in the analysis.
[4] A single westbound through lane makes the intersection fail, but will remain in its existing state to regulate traffic through the West End neighborhood.
[5] Through traffic diverted from I-270 and points west will increase as West Montgomery reaches capacity.
[6] Intersection failure is due to north/south and east/west major connectors carrying through traffic.

Travel times to and from the Town Center would increase slightly under the proposed master plan scenarios.

Recommendation 3: Increase transit use by residents and employers.

- Current Master Plan: Adequate
- Proposed Master Plan: Adequate

Both the current and proposed Master Plans discuss transit accessibility but make little mention of specific transit improvements in the town center, such as circulator buses or additional transit facilities. Under both scenarios, transit ridership is below the regional average in all areas other than the town center for employees in Rockville. The proposed Master plan shows a 28% increase in transit ridership from the town center, increasing transit ridership from 14% to 18%. Transit ridership in areas surrounding the town center either increased slightly or remained constant under the proposed Master Plan.

Under both scenarios we see the highest percentage of Rockville resident transit use near the Rockville and Twinbrook Metrorail stations with up to 34% transit ridership. On average, residents of Rockville used transit 7% more than employees in Rockville.

The current Master Plan refers to transit incentives to take advantage of the existing Metrorail station and bus access to the Town Center. Additionally, the Plan states that pedestrian access to transit should be given priority over automobiles in site and building design.

The proposed Master Plan outlines planning and design principles to be implemented that will make the Rockville Metrorail Station both an origin and destination, integrating mixed uses and keeping strong connections to the Town Center both at street level and at the pedestrian promenade. In addition there should be accommodations for transfers between modes such as pedestrian paths, bus shelters, kiss-and-ride stops and bike racks close to the main entrances of Metrorail stations.

Recommendation 4: Construct multi-modal transportation improvements to support the impacts resulting from land development (Adequate Public Facilities).

This recommendation is not scored, as this will be determined during the development review process.

The current Master Plan has little discussion specific to multi-modal transportation improvements.

The proposed Master Plan discusses accommodations to encourage transfers between modes of transportation. The locations of pedestrian circulation paths, bus shelters, ‘kiss and ride’ stops, and bike racks are crucial; they should be located as close to the main entrances of the station as possible.

Recommendation 5: Maximize incentives for demand management strategies.

This recommendation is not scored as this is addressed in both citywide transportation chapters.

The current Master Plan states that the Standard Traffic Methodology should continue to accommodate alternative traffic mitigation steps such as ride-share, transportation management and other measures to discourage the use of the single occupant vehicle.

The plan goes on to say that transit incentives should be encouraged to take advantage of the existing Metro rail station and bus access to the Town Center. A concept similar to the Metrorail Performance District in the RPC zone should be explored for the properties near Metrorail as part of an implementation strategy. Participation by employers in transit management programs should be encouraged. A transit enhancement plan for the Town center should be implemented in cooperation with the County, WMATA, the private sector and the State.

The proposed Master Plan does not formally outline incentives for demand management strategies.

Policy 2: Promote a transportation system that is multi-modal, accessible, and friendly to all users.

Recommendation 1: Improve pedestrian connections from households to activity centers.

- **Current Master Plan: Excellent**
- **Proposed Master Plan: Excellent**

Each Master Plan has given detailed attention to Pedestrian elements in the Town Center improving pedestrian connectivity between neighborhoods, activity centers and transit connections as well as attention to elements that will enhance pedestrian safety.

The current Master Plans stresses the need for pedestrian access to transit to be given priority over automobiles in site and building design and the need for a continuous pedestrian network to allow comfortable and effective circulation throughout the Town Center. Additionally, sidewalks along the transit station should be broad enough to accommodate active pedestrian movement.

The proposed Master Plan features a pedestrian promenade that will create an attractive entryway into the Town Center from the Rockville Metrorail Station for visitors, commuters and residents. The plan also features an L-shaped pedestrian spine extending from the Metrorail station westward along Montgomery Avenue and a northward extension of Maryland Avenue to North Washington Street.

Recommendation 2: Improve bicycle connections from households to activity centers.

- **Current Master Plan: Adequate**
- **Proposed Master Plan: Adequate**

Unfortunately, the documents contain minimal discussion of bicycle connections in the town center in both Master Plans. However, while the current Master Plan makes little mention of bicycle facilities, the proposed Master Plan describes streets designed to accommodate motor vehicles, pedestrians and cyclists appropriately and states that facilities for cyclists should be incorporated into street improvements and open space plans.

In an addendum to the proposed Master Plan regarding bikeways, there is a detailed list of streets and bikeways to be evaluated for future bike facilities in the Town Center. The citywide bicycle plan outlines a network of bicycle routes on main corridors and access roads to the town center as well as within the town center itself. In addition, any new development in the Town Center is responsible to accommodate bikeways and bike parking.

Recommendation 3: Increase transit accessibility.

- **Current Master Plan: Sub-par**
- **Proposed Master Plan: Sub-par**

Neither plan discusses parking facilities near transit facilities or long term capacity to accommodate feeder buses. The current Master Plan refers to transit incentives to take advantage of the existing Metrorail station and bus access to the Town Center (p. 70). Additionally, the Plan states that pedestrian access to transit should be given priority over automobiles in site and building design.

The proposed Master Plan outlines planning and design principles to be implemented that will make the Rockville Metrorail Station both an origin and destination, integrating mixed uses and keeping strong connections to the Town Center both at street level and at the pedestrian promenade. In addition there should be accommodations for transfers between modes such as pedestrian paths, bus shelters, kiss-and-ride stops and bike racks close to the main entrances of Metrorail stations.

Recommendation 4: Increase carpool and vanpool use.

- **Current Master Plan: Poor**
- **Proposed Master Plan: Poor**

There is little or no discussion in either plan of carpool and vanpool use however this topic is covered in the citywide transportation chapter of the proposed Master Plan.

The current Master Plan incorporates alternative traffic mitigation steps to discourage the use of the single occupant vehicle.

This oversight may have a direct impact on parking supply in the town center.

Policy 3: Respect and protect neighborhoods especially from the impacts of regional traffic.

Recommendation 1: Minimize non-local traffic in neighborhoods.

- **Current Master Plan: Good**
- **Proposed Master Plan: Adequate**

The proposed Master Plan seeks to protect residential neighborhoods by facilitating a comfortable transition toward the East Rockville and Lincoln Park neighborhoods. The area north of Park Road would include less dense office buildings than the area west of Rockville Pike in order to facilitate this transition. As the center of the Rockville community, the Town Center will be well connected to adjacent neighborhoods but will not use them for funneling tremendous amounts of traffic.

Policy 5: Minimize the neighborhood separation effects of major transportation facilities.

Recommendation 1: Retrofit pedestrian and bike connections between existing neighborhoods that are divided by major transportation facilities.

- **Current Master Plan: Sub-par**
- **Proposed Master Plan: Good**

The proposed Master Plan outlines a number of projects and corridors to establish pedestrian and bike connections between existing neighborhoods and the Town Center. The Plan outlines an improved bridge that will enhance pedestrian crossing.

Recommendation 2: Retrofit the existing street network to "bridge" the gap between the communities.

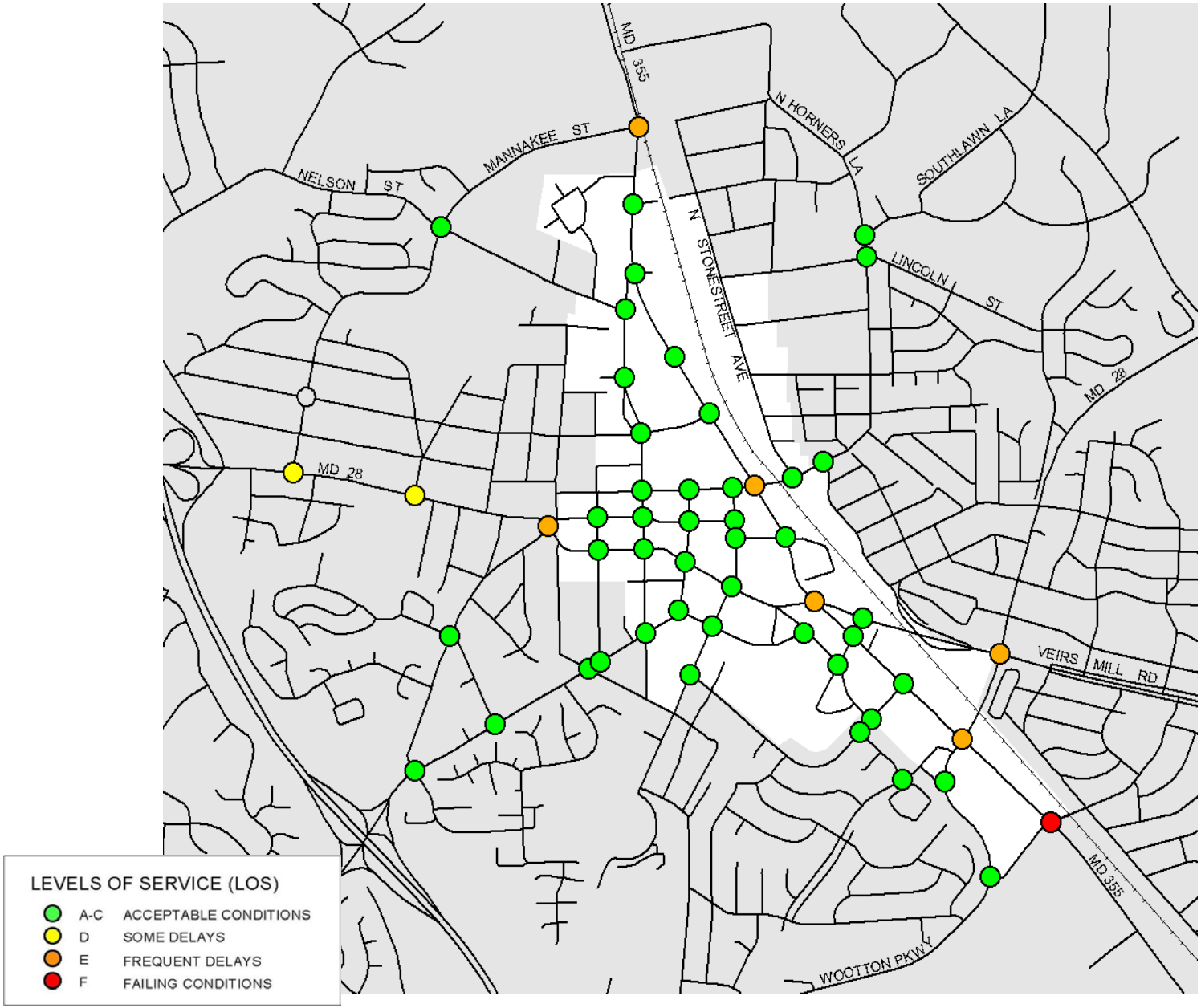
- **Current Master Plan: Adequate**
- **Proposed Master Plan: Good**

The proposed Master Plan outlines a plan to study new connections from Rockville's east side neighborhoods, currently separated by the Metrorail and CSX railroad tracks, to the Town Center. The Plan identifies Beall Avenue and Church Street as potential places for these connections.

In the proposed Master Plans traffic patterns will be altered with redeveloped Metrorail station; mechanisms are to be put in place for reducing traffic impacts on neighborhoods. If executed appropriately, the proposed connectors to the east side could provide relief while simultaneously improving access to the Town Center from East Rockville.

Intersection Levels of Service

Attachment B: AM Existing

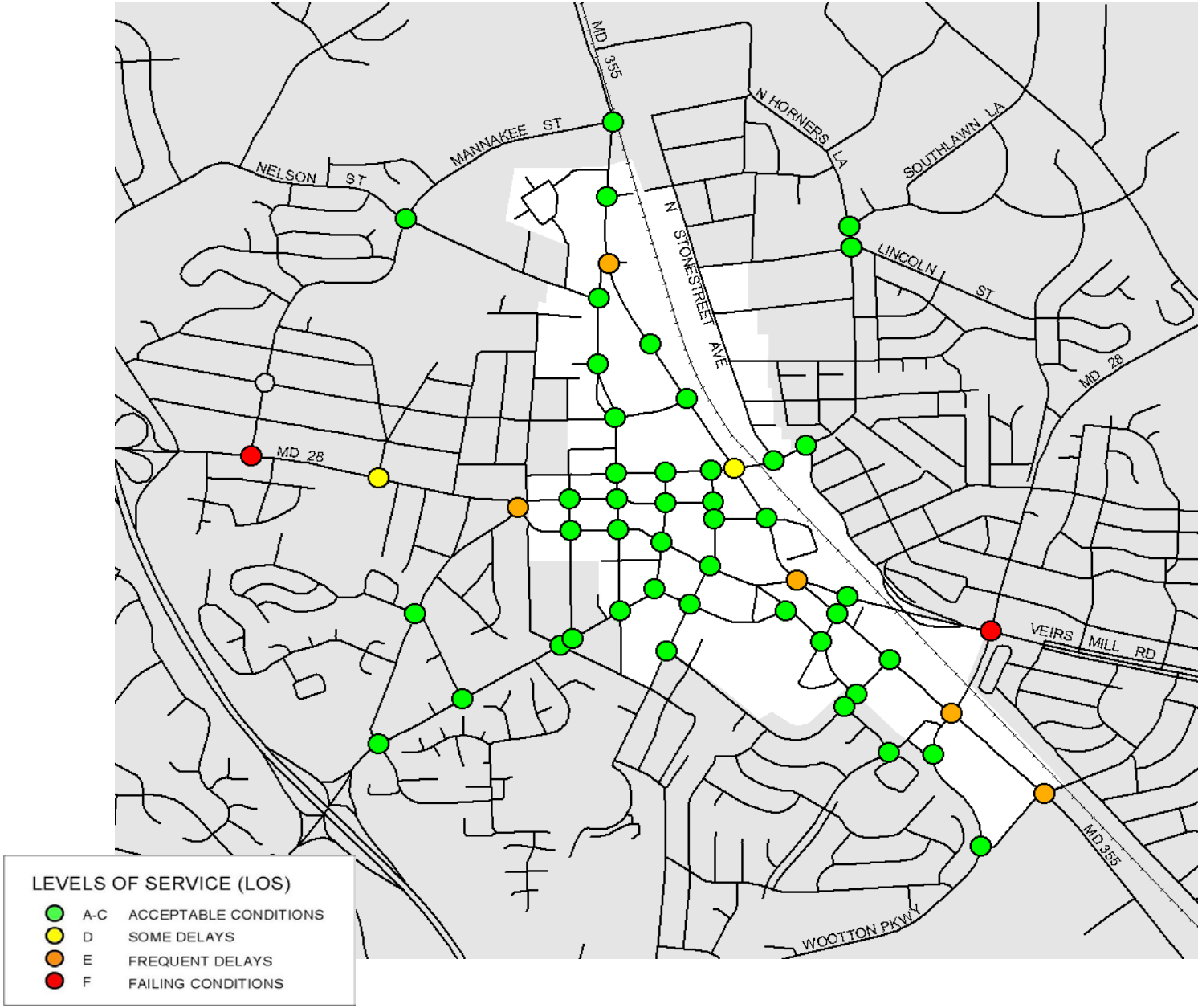


City of Rockville, MD. Town Center Transportation Analysis.
Department of Public Works, Traffic and Transportation Division. May 15, 2003.

EXISTING TRAFFIC CONDITIONS - MORNING PEAK PERIOD

INTERSECTION	INTER-SECTION #	FR SOUTH CLV	FR NORTH CLV	FR WEST CLV	FR EAST CLV	AM CLV TOTAL	AM V/C RATIO	AM LOS
Manakee St. & MD 355	1	369	1406	0	85	1490	0.90	E
Frederick Ave & MD 355	2	574	1040	70	36	1110	0.67	B
N. Horners Ln & Southlawn Ln	3	394	202	345	395	789	0.49	A
N. Washington & MD 355	4	573	1047	119	33	1198	0.77	C
N. Horners Ln & Lincoln Av	5	326	484	69	93	577	0.36	A
Martins Ln & Manakee St	6	253	85	239	548	800	0.53	A
N. Washington & Martins Ln	7	242	411	147	141	557	0.39	A
Dawson Ave & N. Washington	8	251	367	17	4	385	0.24	A
Maryland Av & Dawson (Fut.)	9	0	0	0	0	0	0.00	N/A
Dawson Ave & MD 355	10	553	908	26	28	936	0.56	A
Beall Ave & N. Washington	11	379	535	270	134	805	0.53	A
Beall Av & Market St (Fut.)	12	0	0	0	0	0	0.00	N/A
Maryland Av & Beall (Fut.)	13	0	0	0	0	0	0.00	N/A
Beall Ave & MD 355	14	613	986	115	121	1107	0.67	B
W. Middle Ln & N. Washington	15	431	258	225	122	655	0.43	A
Market St & Middle Ln (Fut.)	16	0	0	0	0	0	0.00	N/A
Maryland Av & Middle Ln	17	330	128	593	456	924	0.57	A
Middle Ln & RCI St (Fut.)	18	0	0	0	0	0	0.00	N/A
Middle Ln & Monroe St	19	72	34	231	563	635	0.39	A
E. Middle Ln & MD 355	20	631	1027	475	382	1502	0.96	E
Park Rd & N. Stonestreet	21	47	50	221	704	754	0.50	A
Park Rd & S. Stonestreet	22	0	608	179	98	885	0.59	A
N. Adams St & W. Montgomery Av	23	26	96	568	325	664	0.41	A
W. Montgomery & N. Washington	24	121	318	156	500	818	0.49	A
Maryland Av & E. Montgomery Av	25	377	282	171	115	548	0.34	A
RCI St & E. Montgomery (Fut.)	26	0	0	0	0	0	0.00	N/A
Monroe St & E. Montgomery Av	27	172	129	112	55	283	0.17	A
Monroe St & Monroe Pl & COB	28	268	231	333	362	630	0.39	A
MD 355 & Church St & Monroe Pl	29	553	956	307	284	1263	0.76	C
Manakee St & MD 28	30	3	86	1311	1299	1397	0.87	D
W. Montgomery Av & Laird St	31	72	100	1342	1054	1441	0.84	D
W. Jefferson & Great Falls Rd	32	326	216	596	1166	1492	0.99	E
N. Adams St & W. Jefferson St	33	6	0	594	440	600	0.37	A
Jefferson St & N. Washington	34	395	0	588	585	983	0.59	A
Jefferson St & Maryland Ave	35	363	265	743	545	1106	0.69	B
Jefferson St & Monroe St	36	205	188	729	687	935	0.58	A
MD 355 & W. Jefferson & Viers Mill	37	671	951	539	433	1490	0.99	E
Rose Petal Wy & Great Falls Rd	38	20	28	305	462	489	0.30	A
Maryland Av & Fleet St	39	438	196	7	113	558	0.37	A
Fleet St & Monroe St	40	106	137	324	301	461	0.30	A
Jefferson Plaza & Fleet St	41	59	76	128	232	309	0.19	A
Falls Road & Maryland Av	42	144	204	476	638	842	0.54	A
Monument St & Maryland Av	43	185	190	501	562	751	0.46	A
Maryland Av & W. Argyle St	44	196	204	590	446	795	0.52	A
S. Adams St & Maryland Av	45	9	18	586	419	604	0.37	A
S. Washington St & Maryland Av	46	236	236	673	621	909	0.56	A
Fleet St & Richard Montgomery Dr	47	247	188	20	391	638	0.39	A
MD 355 & Richard Montgomery Dr	48	284	981	134	160	1141	0.69	B
MD 355 & Dodge St	49	589	689	70	14	759	0.47	A
Monroe St & Mt Vernon Pl	50	223	161	75	171	394	0.24	A
Mt Vernon Pl & E. Jefferson St	51	194	86	209	185	402	0.25	A
Fleet St & Mt Vernon Pl	52	87	0	257	282	369	0.23	A
MD 355 & Mt Vernon Pl	53	409	1000	84	20	1084	0.67	B
E. Jefferson St & Ritchie Pk	54	171	172	81	225	397	0.24	A
Fleet St & Ritchie Pk (fut.)	55	0	0	0	0	0	0.00	N/A
Fleet St & Wootton Pk	56	143	0	206	634	777	0.48	A
MD 355 & First St & Wootton Pk	57	379	942	190	369	1500	0.96	E
Viers Mill Rd & First St	58	750	645	211	529	1490	0.96	E
Wootton Pk & W. Edmonston Dr	59	381	295	301	0	683	0.45	A
MD 355 & W. Edmonston Dr	60	324	1130	473	366	1603	1.03	F

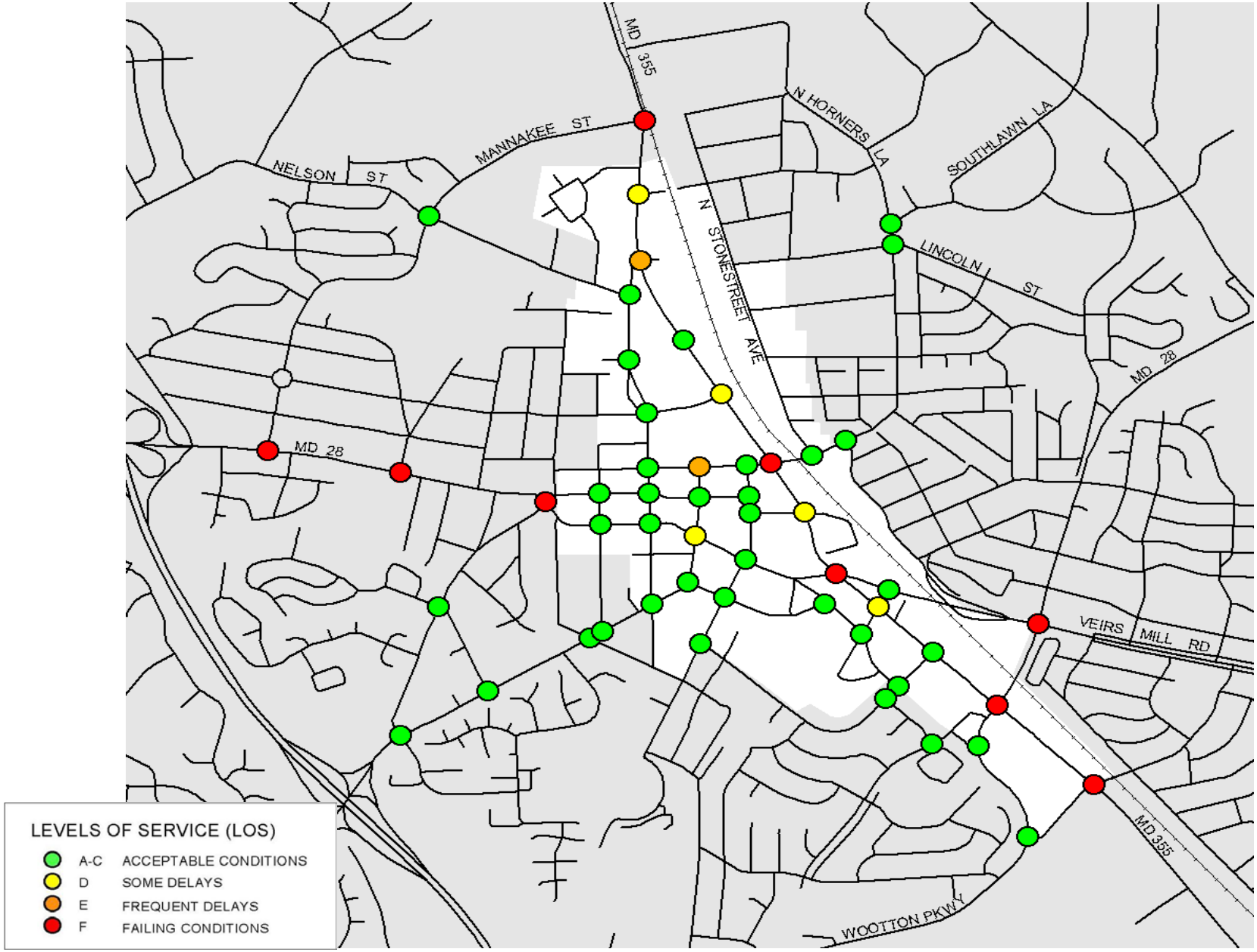
Attachment C: PM Existing



Existing Traffic Conditions – Afternoon Peak Period

INTERSECTION	INTER-SECTION #	FR SOUTH CLV	FR NORTH CLV	FR WEST CLV	FR EAST CLV	AM CLV TOTAL	AM V/C RATIO	AM LOS
Manakee St. & MD 355	1	850	953	0	235	1188	0.72	C
Frederick Ave & MD 355	2	960	800	186	111	1146	0.69	B
N. Horners Ln & Southlawn Ln	3	519	317	209	258	777	0.48	A
N. Washington & MD 355	4	943	757	298	133	1375	0.98	E
N. Horners Ln & Lincoln Av	5	516	458	71	107	622	0.38	A
Martins Ln & Manakee St	6	243	194	185	454	697	0.46	A
N. Washington & Martins Ln	7	490	534	220	223	756	0.54	A
Dawson Ave & N. Washington	8	408	404	17	8	425	0.26	A
Maryland Av & Dawson (Fut.)	9	0	0	0	0	0	0.00	A
Dawson Ave & MD 355	10	754	704	165	220	974	0.59	A
Beall Ave & N. Washington	11	515	542	215	170	757	0.50	A
Beall Av & Market St (Fut.)	12	0	0	0	0	0	0.00	N/A
Maryland Av & Beall (Fut.)	13	0	0	0	0	0	0.00	N/A
Beall Ave & MD 355	14	742	829	94	104	932	0.58	A
W. Middle Ln & N. Washington	15	372	192	189	157	561	0.37	A
Market St & Middle Ln (Fut.)	16	0	0	0	0	0	0.00	N/A
Maryland Av & Middle Ln	17	430	260	581	399	1011	0.63	B
Middle Ln & RCI St (Fut.)	18	0	0	0	0	0	0.00	N/A
Middle Ln & Monroe St	19	153	70	258	416	569	0.35	A
E. Middle Ln & MD 355	20	948	800	419	311	1368	0.88	D
Park Rd & N. Stonestreet	21	78	82	378	511	593	0.39	A
Park Rd & S. Stonestreet	22	0	344	329	123	797	0.53	A
N. Adams St & W. Montgomery Av	23	22	76	494	575	651	0.40	A
W. Montgomery & N. Washington	24	154	313	121	496	809	0.49	A
Maryland Av & E. Montgomery Av	25	241	269	95	123	392	0.24	A
RCI St & E. Montgomery (Fut.)	26	0	0	0	0	0	0.00	N/A
Monroe St & E. Montgomery Av	27	209	169	144	104	352	0.22	A
Monroe St & Monroe Pl & COB	28	229	191	245	281	510	0.31	A
MD 355 & Church St & Monroe Pl	29	794	733	283	340	1134	0.68	B
Manakee St & MD 28	30	1	138	1188	1655	1793	1.12	F
W. Montgomery Av & Laird St	31	32	95	1108	1335	1431	0.86	D
W. Jefferson & Great Falls Rd	32	246	244	554	1163	1409	0.93	E
N. Adams St & W. Jefferson St	33	7	0	475	559	566	0.35	A
Jefferson St & N. Washington	34	333	0	513	571	904	0.54	A
Jefferson St & Maryland Ave	35	302	447	678	588	1125	0.70	C
Jefferson St & Monroe St	36	321	332	655	564	987	0.61	B
MD 355 & W. Jefferson & Viers Mill	37	1098	730	383	279	1481	0.98	E
Rose Petal Wy & Great Falls Rd	38	32	33	299	401	434	0.27	A
Maryland Av & Fleet St	39	302	286	21	499	822	0.58	A
Fleet St & Monroe St	40	113	187	351	516	703	0.46	A
Jefferson Plaza & Fleet St	41	65	107	142	293	400	0.24	A
Falls Road & Maryland Av	42	20	46	383	861	907	0.58	A
Monument St & Maryland Av	43	6	11	375	1083	1094	0.68	B
Maryland Av & W. Argyle St	44	164	161	341	925	1089	0.72	C
S. Adams St & Maryland Av	45	2	6	337	909	915	0.57	A
S. Washington St & Maryland Av	46	100	190	366	814	1004	0.62	B
Fleet St & Richard Montgomery Dr	47	528	161	50	281	808	0.50	A
MD 355 & Richard Montgomery Dr	48	706	756	157	201	956	0.57	A
MD 355 & Dodge St	49	644	555	222	20	866	0.54	A
Monroe St & Mt Vernon Pl	50	195	215	72	129	343	0.21	A
Mt Vernon Pl & E. Jefferson St	51	123	46	240	239	363	0.22	A
Fleet St & Mt Vernon Pl	52	59	0	243	291	351	0.21	A
MD 355 & Mt Vernon Pl	53	751	845	144	39	989	0.61	B
E. Jefferson St & Ritchie Pk	54	195	209	57	168	378	0.23	A
Fleet St & Ritchie Pk (fut.)	55	0	0	0	0	0	0.00	N/A
Fleet St & Wootton Pk	56	55	0	404	480	535	0.33	A
MD 355 & First St & Wootton Pk	57	846	742	389	238	1472	0.94	E
Viers Mill Rd & First St	58	771	823	597	310	1730	1.11	F
Wootton Pk & W. Edmonston Dr	59	250	363	221	0	584	0.38	A
MD 355 & W. Edmonston Dr	60	957	966	465	301	1431	0.92	E

Attachment D: AM Without FRIT



City of Rockville, MD. Town Center Transportation Analysis.
Department of Public Works, Traffic and Transportation Division. May 15, 2003.

YEAR 2006 WITHOUT FRIT - MORNING PEAK PERIOD

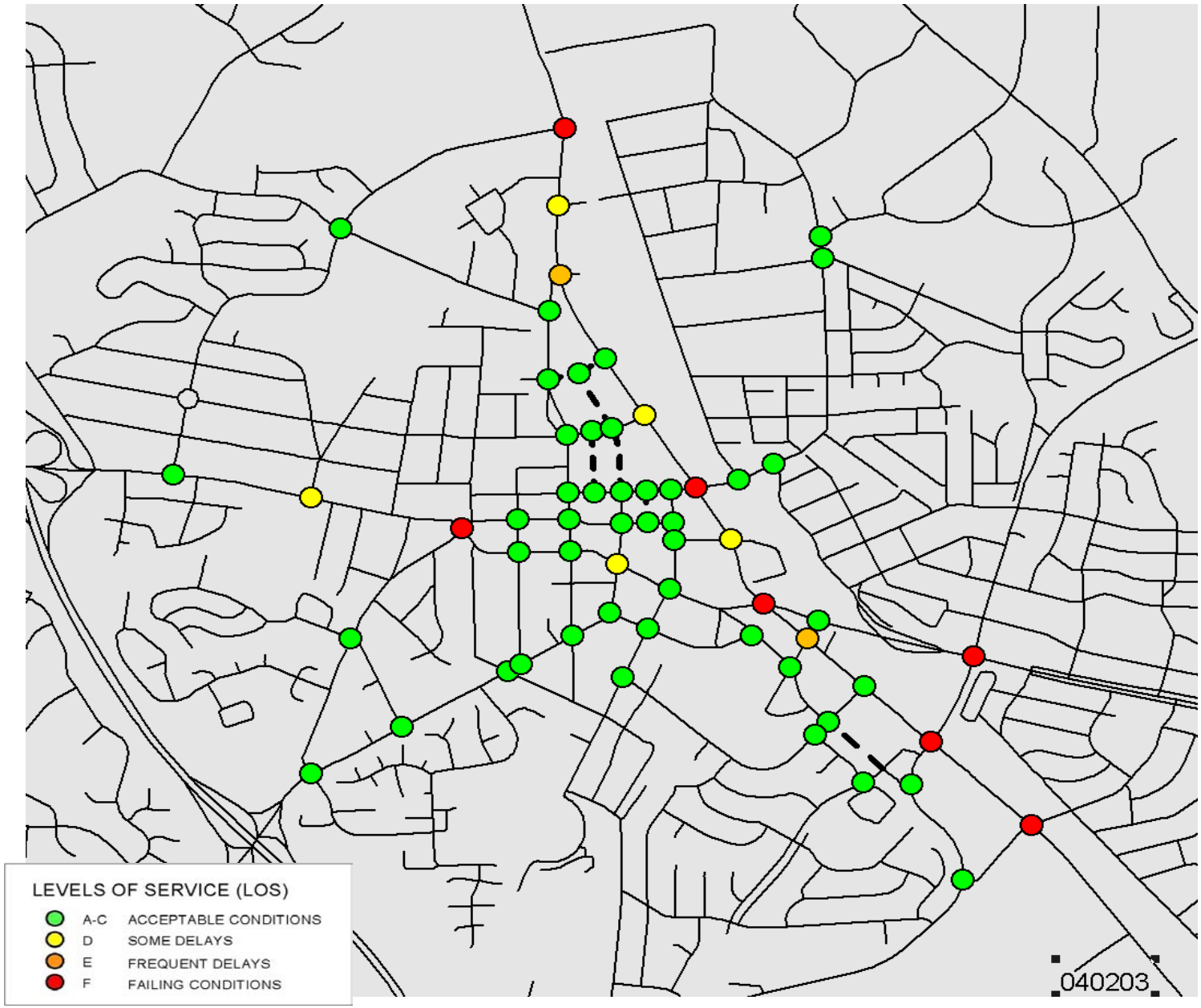
INTERSECTION	INTER-SECTION #	FR SOUTH CLV	FR NORTH CLV	FR WEST CLV	FR EAST CLV	AM CLV TOTAL	AM V/C RATIO	AM LOS
Manakee St. & MD 355	1	423	1662	0	85	1747	1.05	F
Frederick Ave & MD 355	2	629	1297	70	36	1367	0.82	D
N. Horners Ln & Southlawn Ln	3	399	209	351	401	800	0.49	A
N. Washington & MD 355	4	617	1302	135	50	1487	0.95	E
N. Horners Ln & Lincoln Av	5	331	489	69	93	582	0.36	A
Martins Ln & Manakee St	6	253	85	239	548	800	0.53	A
N. Washington & Martins Ln	7	262	471	148	142	619	0.44	A
Dawson Ave & N. Washington	8	318	432	41	98	530	0.33	A
Maryland Av & Dawson (Fut.)	9	10	6	83	43	92	0.05	A
Dawson Ave & MD 355	10	608	1137	144	141	1282	0.77	C
Beall Ave & N. Washington	11	470	585	330	134	915	0.61	B
Beall Av & Market St (Fut.)	12	0	0	181	148	181	0.11	A
Maryland Av & Beall (Fut.)	13	35	46	182	232	278	0.17	A
Beall Ave & MD 355	14	642	1240	202	126	1442	0.87	D
W. Middle Ln & N. Washington	15	537	301	297	123	834	0.55	A
Market St & Middle Ln (Fut.)	16	22	11	404	271	426	0.26	A
Maryland Av & Middle Ln	17	756	487	762	692	1518	0.94	E
Middle Ln & RCI St (Fut.)	18	107	63	885	594	991	0.61	B
Middle Ln & Monroe St	19	134	88	677	630	811	0.50	A
E. Middle Ln & MD 355	20	660	1207	497	563	1771	1.14	F
Park Rd & N. Stonestreet	21	47	50	243	840	890	0.59	A
Park Rd & S. Stonestreet	22	0	888	184	98	1170	0.77	C
N. Adams St & W. Montgomery Av	23	26	96	742	417	838	0.52	A
W. Montgomery & N. Washington	24	161	378	190	632	1010	0.61	B
Maryland Av & E. Montgomery Av	25	700	363	246	169	946	0.59	A
RCI St & E. Montgomery (Fut.)	26	36	56	384	343	440	0.27	A
Monroe St & E. Montgomery Av	27	862	681	210	87	1072	0.67	B
Monroe St & Monroe Pl & COB	28	457	257	334	363	820	0.51	A
MD 355 & Church St & Monroe Pl	29	633	1119	322	288	1441	0.87	D
Manakee St & MD 28	30	3	86	1701	1397	1787	1.11	F
W. Montgomery Av & Laird St	31	72	100	1731	1152	1831	1.07	F
W. Jefferson & Great Falls Rd	32	367	216	778	1361	1728	1.15	F
N. Adams St & W. Jefferson St	33	3	0	784	506	786	0.49	A
Jefferson St & N. Washington	34	395	0	806	871	1266	0.76	C
Jefferson St & Maryland Ave	35	559	304	818	661	1377	0.86	D
Jefferson St & Monroe St	36	345	276	791	884	1229	0.76	C
MD 355 & W. Jefferson & Viers Mill	37	742	1195	558	525	1753	1.16	F
Rose Petal Wy & Great Falls Rd	38	20	28	346	511	538	0.33	A
Maryland Av & Fleet St	39	630	223	7	143	780	0.52	A
Fleet St & Monroe St	40	169	194	401	403	597	0.39	A
Jefferson Plaza & Fleet St	41	59	149	180	232	381	0.23	A
Falls Road & Maryland Av	42	144	204	649	717	921	0.59	A
Monument St & Maryland Av	43	185	190	678	634	868	0.54	A
Maryland Av & W. Argyle St	44	196	204	764	511	968	0.64	B
S. Adams St & Maryland Av	45	9	18	759	484	777	0.48	A
S. Washington St & Maryland Av	46	236	236	952	877	1188	0.74	C
Fleet St & Richard Montgomery Dr	47	247	322	21	462	784	0.49	A
MD 355 & Richard Montgomery Dr	48	393	1228	141	249	1477	0.89	D
MD 355 & Dodge St	49	656	791	77	14	868	0.54	A
Monroe St & Mt Vernon Pl	50	223	161	75	171	394	0.24	A
Mt Vernon Pl & E. Jefferson St	51	26	6	99	106	132	0.08	A
Fleet St & Mt Vernon Pl	52	323	232	328	322	651	0.40	A
MD 355 & Mt Vernon Pl	53	538	1142	84	20	1226	0.76	C
E. Jefferson St & Ritchie Pk	54	33	40	91	61	131	0.08	A
Fleet St & Ritchie Pk (fut.)	55	185	35	78	29	263	0.16	A
Fleet St & Wootton Pk	56	143	0	255	928	1071	0.66	B
MD 355 & First St & Wootton Pk	57	494	983	210	508	1701	1.09	F
Viers Mill Rd & First St	58	890	694	248	680	1818	1.17	F
Wootton Pk & W. Edmonston Dr	59	431	589	301	0	890	0.59	A
MD 355 & W. Edmonston Dr	60	444	1174	473	366	1648	1.06	F

Attachment E: PM Without FRIT

YEAR 2006 WITHOUT FRIT - AFTERNOON PEAK PERIOD

INTERSECTION	INTER-SECTION #	FR SOUTH CLV	FR NORTH CLV	FR WEST CLV	FR EAST CLV	AM CLV TOTAL	AM V/C RATIO	AM LOS
Manakee St. & MD 355	1	1121	1026	0	235	1357	0.82	D
Frederick Ave & MD 355	2	1231	873	186	111	1417	0.85	D
N. Horners Ln & Southlawn Ln	3	527	317	211	260	787	0.49	A
N. Washington & MD 355	4	1169	823	400	139	1708	1.22	F
N. Horners Ln & Lincoln Av	5	524	460	71	107	630	0.39	A
Martins Ln & Manakee St	6	243	194	191	477	720	0.47	A
N. Washington & Martins Ln	7	623	603	220	223	846	0.60	B
Dawson Ave & N. Washington	8	575	429	46	114	690	0.43	A
Maryland Av & Dawson (Fut.)	9	10	0	94	65	104	0.06	A
Dawson Ave & MD 355	10	977	762	250	300	1277	0.77	C
Beall Ave & N. Washington	11	583	563	244	170	827	0.55	A
Beall Av & Market St (Fut.)	12	0	0	129	282	282	0.17	A
Maryland Av & Beall (Fut.)	13	369	413	207	216	630	0.39	A
Beall Ave & MD 355	14	879	895	250	387	1282	0.80	D
W. Middle Ln & N. Washington	15	429	214	396	169	825	0.54	A
Market St & Middle Ln (Fut.)	16	94	45	202	418	512	0.32	A
Maryland Av & Middle Ln	17	541	568	696	667	1265	0.79	C
Middle Ln & RCI St (Fut.)	18	849	751	697	575	1545	0.96	E
Middle Ln & Monroe St	19	355	183	588	654	1009	0.63	B
E. Middle Ln & MD 355	20	1085	842	606	358	1691	1.09	F
Park Rd & N. Stonestreet	21	78	82	564	557	646	0.43	A
Park Rd & S. Stonestreet	22	0	439	337	123	899	0.59	A
N. Adams St & W. Montgomery Av	23	22	76	626	929	1005	0.62	B
W. Montgomery & N. Washington	24	159	318	133	620	937	0.56	A
Maryland Av & E. Montgomery Av	25	464	577	444	507	1084	0.67	B
RCI St & E. Montgomery (Fut.)	26	295	465	226	405	870	0.54	A
Monroe St & E. Montgomery Av	27	336	381	649	565	1030	0.64	B
Monroe St & Monroe Pl & COB	28	417	639	263	299	937	0.58	A
MD 355 & Church St & Monroe Pl	29	934	834	359	377	1310	0.79	C
Manakee St & MD 28	30	1	138	1290	2042	2181	1.36	F
W. Montgomery Av & Laird St	31	32	95	1210	1723	1819	1.10	F
W. Jefferson & Great Falls Rd	32	254	289	636	1419	1708	1.13	F
N. Adams St & W. Jefferson St	33	7	0	508	672	679	0.42	A
Jefferson St & N. Washington	34	333	0	665	842	1175	0.71	C
Jefferson St & Maryland Ave	35	431	834	729	669	1564	0.97	E
Jefferson St & Monroe St	36	767	729	721	641	1488	0.92	E
MD 355 & W. Jefferson & Viers Mill	37	1268	870	493	313	1761	1.17	F
Rose Petal Wy & Great Falls Rd	38	32	33	307	463	496	0.31	A
Maryland Av & Fleet St	39	367	564	21	593	1178	0.84	D
Fleet St & Monroe St	40	138	237	403	592	829	0.55	A
Jefferson Plaza & Fleet St	41	65	193	155	293	486	0.30	A
Falls Road & Maryland Av	42	27	46	431	1065	1111	0.71	C
Monument St & Maryland Av	43	6	11	423	1455	1466	0.91	E
Maryland Av & W. Argyle St	44	164	161	392	1303	1467	0.97	E
S. Adams St & Maryland Av	45	2	6	385	1281	1287	0.80	D
S. Washington St & Maryland Av	46	100	190	419	1196	1386	0.86	D
Fleet St & Richard Montgomery Dr	47	528	190	53	297	824	0.51	A
MD 355 & Richard Montgomery Dr	48	840	918	193	288	1206	0.73	C
MD 355 & Dodge St	49	675	696	258	20	955	0.59	A
Monroe St & Mt Vernon Pl	50	202	238	74	133	371	0.23	A
Mt Vernon Pl & E. Jefferson St	51	14	6	105	132	146	0.09	A
Fleet St & Mt Vernon Pl	52	211	175	275	298	509	0.31	A
MD 355 & Mt Vernon Pl	53	889	1002	144	39	1146	0.71	C
E. Jefferson St & Ritchie Pk	54	24	45	57	69	114	0.07	A
Fleet St & Ritchie Pk (fut.)	55	175	167	44	11	219	0.13	A
Fleet St & Wootton Pk	56	55	0	740	530	795	0.49	A
MD 355 & First St & Wootton Pk	57	889	883	588	244	1722	1.11	F
Viers Mill Rd & First St	58	916	977	801	318	2096	1.35	F
Wootton Pk & W. Edmonston Dr	59	586	412	221	0	807	0.53	A
MD 355 & W. Edmonston Dr.	60	1004	112	465	301	1577	1.01	F

Attachment F: AM With Transportation Improvements (FRIT Included)



City of Rockville, MD. Town Center Transportation Analysis.
Department of Public Works, Traffic and Transportation Division. May 15, 2003.

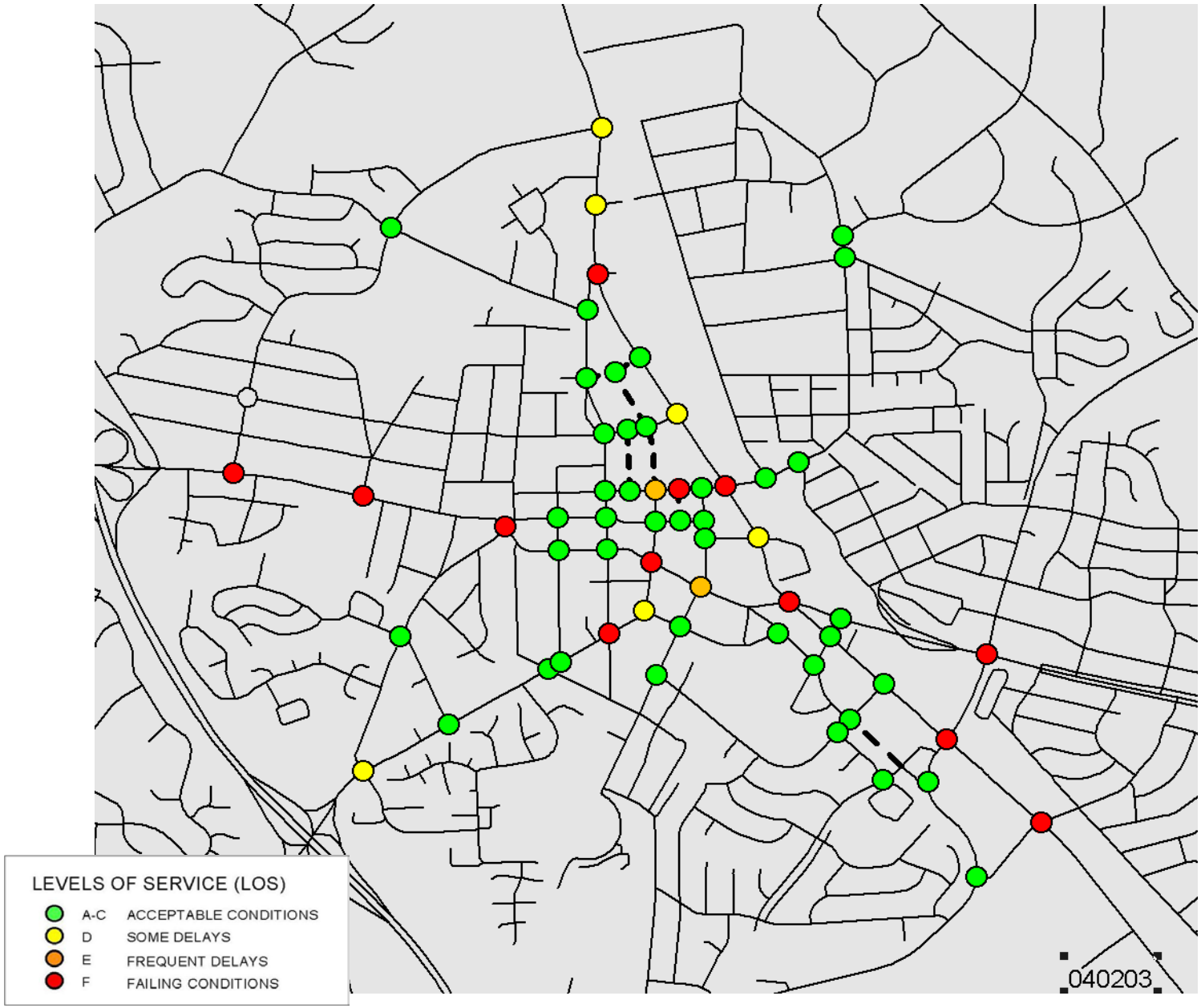
YEAR 2006 WITH FRIT / WITHOUT IMPROVEMENTS - MORNING PEAK PERIOD

INTERSECTION	INTER-SECTION #	FR SOUTH CLV	FR NORTH CLV	FR WEST CLV	FR EAST CLV	AM CLV TOTAL	AM V/C RATIO	AM LOS
Manakee St. & MD 355	1	435	1674	0	85	1759	1.06	F
Frederick Ave & MD 355	2	641	1309	70	36	1379	0.83	D
N. Horners Ln & Southlawn Ln	3	402	209	358	408	810	0.50	A
N. Washington & MD 355	4	624	1314	142	50	1506	0.97	E
N. Horners Ln & Lincoln Av	5	345	506	69	93	599	0.37	A
Martins Ln & Manakee St	6	253	85	241	549	801	0.53	A
N. Washington & Martins Ln	7	270	472	148	142	620	0.44	A
Dawson Ave & N. Washington	8	326	433	41	98	531	0.33	A
Maryland Av & Dawson (Fut.)	9	10	6	83	43	92	0.05	A
Dawson Ave & MD 355	10	615	1149	144	141	1294	0.78	C
Beall Ave & N. Washington	11	480	585	334	136	919	0.61	B
Beall Av & Market St (Fut.)	12	0	0	183	149	183	0.11	A
Maryland Av & Beall (Fut.)	13	51	51	185	232	283	0.17	A
Beall Ave & MD 355	14	642	1251	202	151	1453	0.88	D
W. Middle Ln & N. Washington	15	538	301	413	123	950	0.63	B
Market St & Middle Ln (Fut.)	16	22	11	405	323	427	0.26	A
Maryland Av & Middle Ln	17	851	547	806	750	1656	1.03	F
Middle Ln & RCI St (Fut.)	18	175	161	918	700	1094	0.68	B
Middle Ln & Monroe St	19	134	88	689	671	823	0.51	A
E. Middle Ln & MD 355	20	661	1259	498	566	1825	1.17	F
Park Rd & N. Stonestreet	21	47	50	245	843	893	0.59	A
Park Rd & S. Stonestreet	22	0	888	187	98	1173	0.78	C
N. Adams St & W. Montgomery Av	23	26	96	763	479	859	0.53	A
W. Montgomery & N. Washington	24	161	415	210	643	1058	0.64	B
Maryland Av & E. Montgomery Av	25	761	396	278	201	1039	0.64	B
RCI St & E. Montgomery (Fut.)	26	36	56	384	343	440	0.27	A
Monroe St & E. Montgomery Av	27	862	684	210	87	1072	0.67	B
Monroe St & Monroe Pl & COB	28	457	260	334	363	820	0.51	A
MD 355 & Church St & Monroe Pl	29	655	1137	322	288	1459	0.88	D
Manakee St & MD 28	30	3	86	1735	1433	1821	1.13	F
W. Montgomery Av & Laird St	31	72	100	1765	1188	1865	1.09	F
W. Jefferson & Great Falls Rd	32	374	245	789	1380	1753	1.16	F
N. Adams St & W. Jefferson St	33	8	0	752	486	760	0.47	A
Jefferson St & N. Washington	34	436	0	816	873	1308	0.79	C
Jefferson St & Maryland Ave	35	584	327	837	693	1421	0.88	D
Jefferson St & Monroe St	36	353	280	810	894	1247	0.77	C
MD 355 & W. Jefferson & Viers Mill	37	770	1203	568	533	1771	1.18	F
Rose Petal Wy & Great Falls Rd	38	20	28	353	540	567	0.35	A
Maryland Av & Fleet St	39	655	246	7	143	805	0.53	A
Fleet St & Monroe St	40	169	194	401	403	597	0.39	A
Jefferson Plaza & Fleet St	41	59	149	180	232	381	0.23	A
Falls Road & Maryland Av	42	144	204	662	737	941	0.60	B
Monument St & Maryland Av	43	185	190	691	657	881	0.55	A
Maryland Av & W. Argyle St	44	196	204	777	534	981	0.65	B
S. Adams St & Maryland Av	45	9	18	772	507	790	0.49	A
S. Washington St & Maryland Av	46	236	236	965	900	1201	0.75	C
Fleet St & Richard Montgomery Dr	47	247	322	21	462	784	0.49	A
MD 355 & Richard Montgomery Dr	48	407	1245	141	249	1494	0.90	E
MD 355 & Dodge St	49	669	812	77	14	889	0.55	A
Monroe St & Mt Vernon Pl	50	223	161	75	171	394	0.24	A
Mt Vernon Pl & E. Jefferson St	51	26	6	99	106	132	0.08	A
Fleet St & Mt Vernon Pl	52	323	232	328	322	651	0.40	A
MD 355 & Mt Vernon Pl	53	552	1159	84	20	1243	0.77	C
E. Jefferson St & Ritchie Pk	54	33	40	91	61	131	0.08	A
Fleet St & Ritchie Pk (fut.)	55	185	35	78	29	263	0.16	A
Fleet St & Wootton Pk	56	143	0	255	928	1071	0.66	B
MD 355 & First St & Wootton Pk	57	508	1000	210	508	1718	1.10	F
Viers Mill Rd & First St	58	914	702	248	680	1842	1.18	F
Wootton Pk & W. Edmonston Dr	59	431	589	301	0	890	0.59	A
MD 355 & W. Edmonston Dr.	60	485	1191	473	366	1664	1.07	F

YEAR 2006 WITH FRIT / WITHOUT IMPROVEMENTS - AFTERNOON PEAK PERIOD

INTERSECTION	INTER-SECTION #	FR SOUTH CLV	FR NORTH CLV	FR WEST CLV	FR EAST CLV	AM CLV TOTAL	AM V/C RATIO	AM LOS
Manakee St. & MD 355	1	1150	1055	0	235	1386	0.83	D
Frederick Ave & MD 355	2	1261	902	186	111	1447	0.87	D
N. Horners Ln & Southlawn Ln	3	544	317	228	277	821	0.51	A
N. Washington & MD 355	4	1194	852	406	139	1739	1.24	F
N. Horners Ln & Lincoln Av	5	541	475	71	107	647	0.40	A
Martins Ln & Manakee St	6	243	194	197	483	726	0.48	A
N. Washington & Martins Ln	7	634	611	226	223	859	0.61	B
Dawson Ave & N. Washington	8	585	432	46	114	699	0.43	A
Maryland Av & Dawson (Fut.)	9	10	0	94	65	104	0.06	A
Dawson Ave & MD 355	10	1002	791	250	300	1302	0.78	C
Beall Ave & N. Washington	11	596	563	250	179	846	0.56	A
Beall Av & Market St (Fut.)	12	0	0	137	290	290	0.18	A
Maryland Av & Beall (Fut.)	13	393	437	215	216	654	0.40	A
Beall Ave & MD 355	14	879	924	250	477	1401	0.87	D
W. Middle Ln & N. Washington	15	434	214	558	170	992	0.66	B
Market St & Middle Ln (Fut.)	16	94	45	216	522	616	0.38	A
Maryland Av & Middle Ln	17	1026	979	752	789	1815	1.13	F
Middle Ln & RCI St (Fut.)	18	900	842	755	755	1655	1.03	F
Middle Ln & Monroe St	19	355	183	611	805	1160	0.72	C
E. Middle Ln & MD 355	20	1087	959	613	365	1700	1.09	F
Park Rd & N. Stonestreet	21	78	82	573	565	655	0.43	A
Park Rd & S. Stonestreet	22	0	439	354	123	916	0.61	B
N. Adams St & W. Montgomery Av	23	22	76	655	1032	1108	0.69	B
W. Montgomery & N. Washington	24	159	351	161	651	1002	0.60	B
Maryland Av & E. Montgomery Av	25	711	694	474	537	1248	0.78	C
RCI St & E. Montgomery (Fut.)	26	295	465	226	405	870	0.54	A
Monroe St & E. Montgomery Av	27	336	387	649	565	1036	0.64	B
Monroe St & Monroe Pl & COB	28	417	645	263	299	943	0.58	A
MD 355 & Church St & Monroe Pl	29	976	881	359	377	1353	0.81	D
Manakee St & MD 28	30	1	138	1375	2124	2263	1.41	F
W. Montgomery Av & Laird St	31	32	95	1295	1805	1901	1.15	F
W. Jefferson & Great Falls Rd	32	273	322	680	1448	1769	1.17	F
N. Adams St & W. Jefferson St	33	7	0	529	681	688	0.43	A
Jefferson St & N. Washington	34	370	0	686	848	1218	0.73	C
Jefferson St & Maryland Ave	35	529	866	747	789	1655	1.03	F
Jefferson St & Monroe St	36	776	734	751	684	1527	0.95	E
MD 355 & W. Jefferson & Viers Mill	37	1324	911	511	335	1836	1.22	F
Rose Petal Wy & Great Falls Rd	38	32	33	328	502	535	0.33	A
Maryland Av & Fleet St	39	429	596	21	593	1210	0.86	D
Fleet St & Monroe St	40	138	237	403	592	829	0.55	A
Jefferson Plaza & Fleet St	41	65	193	155	293	486	0.30	A
Falls Road & Maryland Av	42	27	46	463	1103	1149	0.74	C
Monument St & Maryland Av	43	6	11	455	1487	1498	0.93	E
Maryland Av & W. Argyle St	44	164	161	425	1335	1499	0.99	E
S. Adams St & Maryland Av	45	2	6	417	1313	1319	0.82	D
S. Washington St & Maryland Av	46	100	190	452	1228	1418	0.88	D
Fleet St & Richard Montgomery Dr	47	528	190	53	297	824	0.51	A
MD 355 & Richard Montgomery Dr	48	875	966	193	288	1254	0.75	C
MD 355 & Dodge St	49	709	743	258	20	1001	0.62	B
Monroe St & Mt Vernon Pl	50	202	238	74	133	371	0.23	A
Mt Vernon Pl & E. Jefferson St	51	14	6	105	132	146	0.09	A
Fleet St & Mt Vernon Pl	52	211	175	275	298	509	0.31	A
MD 355 & Mt Vernon Pl	53	923	1050	144	39	1194	0.74	C
E. Jefferson St & Ritchie Pk	54	24	45	57	69	114	0.07	A
Fleet St & Ritchie Pk (fut.)	55	175	167	44	11	219	0.13	A
Fleet St & Wootton Pk	56	55	0	740	530	795	0.49	A
MD 355 & First St & Wootton Pk	57	923	930	588	244	1763	1.13	F
Viers Mill Rd & First St	58	967	998	801	318	2117	1.36	F
Wootton Pk & W. Edmonston Dr	59	586	412	221	0	807	0.53	A
MD 355 & W. Edmonston Dr.	60	1038	1160	465	301	1625	1.04	F

Attachment G: PM With FRIT



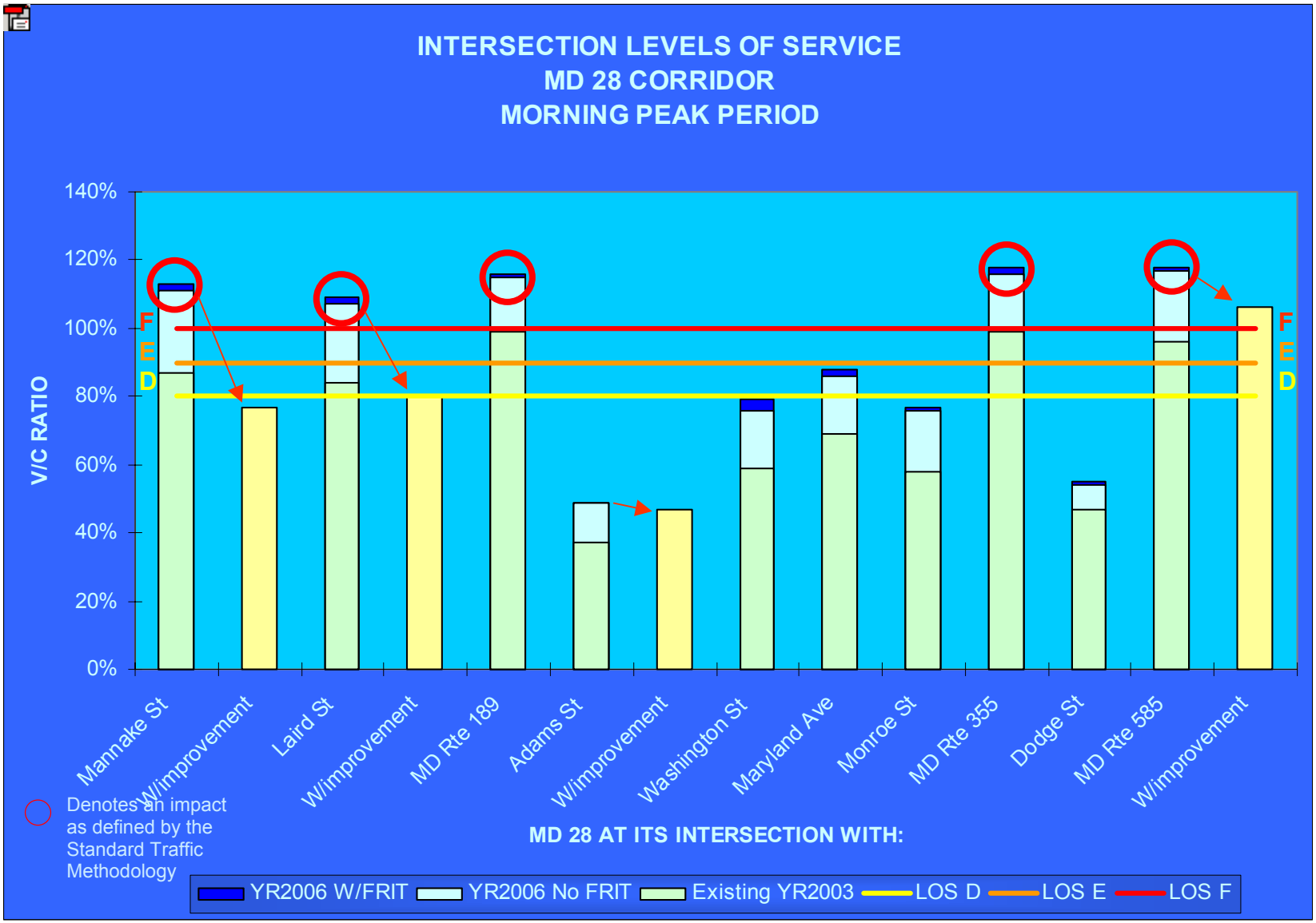
YEAR 2006 WITH FRIT / WITH IMPROMENTS - MORNING PEAK PERIOD

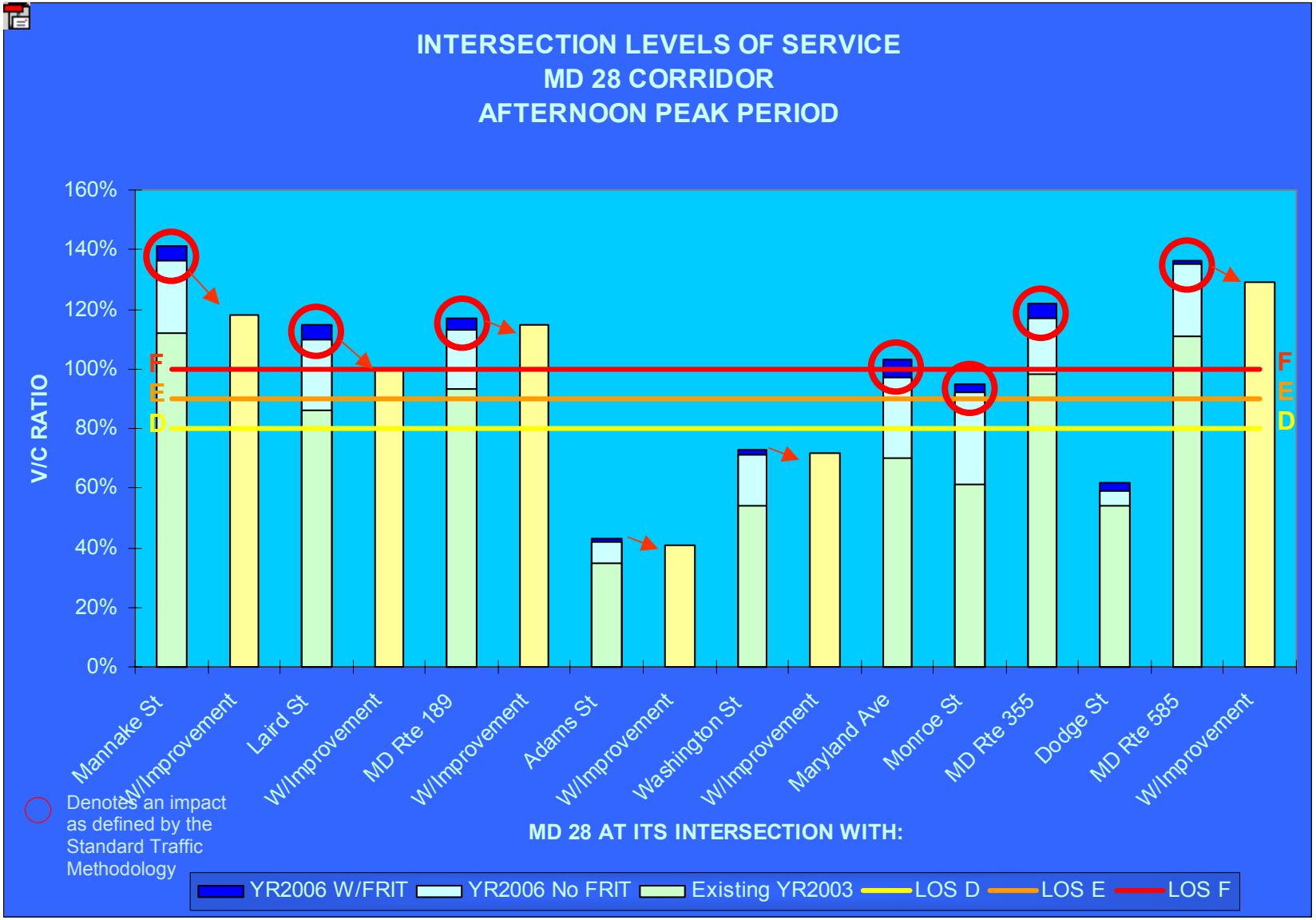
INTERSECTION	INTER-SECTION #	FR SOUTH CLV	FR NORTH CLV	FR WEST CLV	FR EAST CLV	AM CLV TOTAL	AM V/C RATIO	AM LOS
Manakee St. & MD 355	1	435	1674	0	85	1759	1.06	F
Frederick Ave & MD 355	2	641	1309	70	36	1379	0.83	D
N. Horners Ln & Southlawn Ln	3	402	209	358	408	810	0.50	A
N. Washington & MD 355	4	624	1314	142	50	1506	0.97	E
N. Horners Ln & Lincoln Av	5	345	506	69	93	599	0.37	A
Martins Ln & Manakee St	6	253	85	241	549	801	0.53	A
N. Washington & Martins Ln	7	270	472	148	142	620	0.44	A
Dawson Ave & N. Washington	8	326	433	41	98	531	0.33	A
Maryland Av & Dawson (Fut.)	9	10	6	83	43	92	0.05	A
Dawson Ave & MD 355	10	615	1149	144	141	1294	0.78	C
Beall Ave & N. Washington	11	480	585	334	136	919	0.61	B
Beall Av & Market St (Fut.)	12	0	0	183	149	183	0.11	A
Maryland Av & Beall (Fut.)	13	51	51	185	232	283	0.17	A
Beall Ave & MD 355	14	642	1251	202	151	1453	0.88	D
W. Middle Ln & N. Washington	15	538	301	413	123	950	0.63	B
Market St & Middle Ln (Fut.)	16	22	11	405	323	427	0.26	A
Maryland Av & Middle Ln	17	267	190	806	750	1263	0.78	C
Middle Ln & RCI St (Fut.)	18	175	161	918	700	1094	0.68	B
Middle Ln & Monroe St	19	134	88	689	671	823	0.51	A
E. Middle Ln & MD 355	20	661	1259	498	340	1757	1.13	F
Park Rd & N. Stonestreet	21	47	50	245	843	893	0.59	A
Park Rd & S. Stonestreet	22	0	888	187	98	1173	0.78	C
N. Adams St & W. Montgomery Av	23	26	96	763	479	859	0.53	A
W. Montgomery & N. Washington	24	161	415	210	643	1058	0.64	B
Maryland Av & E. Montgomery Av	25	761	396	278	201	1039	0.64	B
RCI St & E. Montgomery (Fut.)	26	36	56	384	343	440	0.27	A
Monroe St & E. Montgomery Av	27	862	684	210	87	1072	0.67	B
Monroe St & Monroe Pl & COB	28	457	260	334	363	820	0.51	A
MD 355 & Church St & Monroe Pl	29	655	1137	322	288	1459	0.88	D
Manakee St & MD 28	30	0	83	911	1155	1238	0.77	C
W. Montgomery Av & Laird St	31	72	100	989	1273	1373	0.80	D
W. Jefferson & Great Falls Rd	32	374	245	792	1380	1753	1.16	F
N. Adams St & W. Jefferson St	33	8	0	752	486	760	0.47	A
Jefferson St & N. Washington	34	436	76	816	873	1308	0.79	C
Jefferson St & Maryland Ave	35	584	327	837	693	1421	0.88	D
Jefferson St & Monroe St	36	353	280	810	894	1247	0.77	C
MD 355 & W. Jefferson & Viers Mill	37	770	1203	568	533	1771	1.18	F
Rose Petal Wy & Great Falls Rd	38	20	28	353	540	567	0.35	A
Maryland Av & Fleet St	39	655	246	7	143	805	0.53	A
Fleet St & Monroe St	40	169	194	401	403	597	0.39	A
Jefferson Plaza & Fleet St	41	59	149	180	232	381	0.23	A
Falls Road & Maryland Av	42	144	204	662	737	941	0.60	B
Monument St & Maryland Av	43	185	190	691	657	881	0.55	A
Maryland Av & W. Argyle St	44	196	204	777	534	981	0.65	B
S. Adams St & Maryland Av	45	9	18	772	507	790	0.49	A
S. Washington St & Maryland Av	46	236	236	965	900	1201	0.75	C
Fleet St & Richard Montgomery Dr	47	247	322	21	462	784	0.49	A
MD 355 & Richard Montgomery Dr	48	407	1245	141	249	1494	0.90	E
MD 355 & Dodge St	49	669	812	77	14	889	0.55	A
Monroe St & Mt Vernon Pl	50	223	161	75	171	394	0.24	A
Mt Vernon Pl & E. Jefferson St	51	26	6	99	106	132	0.08	A
Fleet St & Mt Vernon Pl	52	323	232	328	322	651	0.40	A
MD 355 & Mt Vernon Pl	53	552	1159	84	20	1243	0.77	C
E. Jefferson St & Ritchie Pk	54	33	40	91	61	131	0.08	A
Fleet St & Ritchie Pk (fut.)	55	185	35	78	29	263	0.16	A
Fleet St & Wootton Pk	56	143	0	255	928	1071	0.66	B
MD 355 & First St & Wootton Pk	57	508	1000	210	508	1718	1.10	F
Viers Mill Rd & First St	58	914	702	423	736	1651	1.06	F
Wootton Pk & W. Edmonston Dr	59	431	589	301	0	890	0.59	A
MD 355 & W. Edmonston Dr.	60	458	1191	473	366	1664	1.07	F

YEAR 2006 WITH FRIT / WITH IMPROMENTS - AFTERNOON PEAK PERIOD

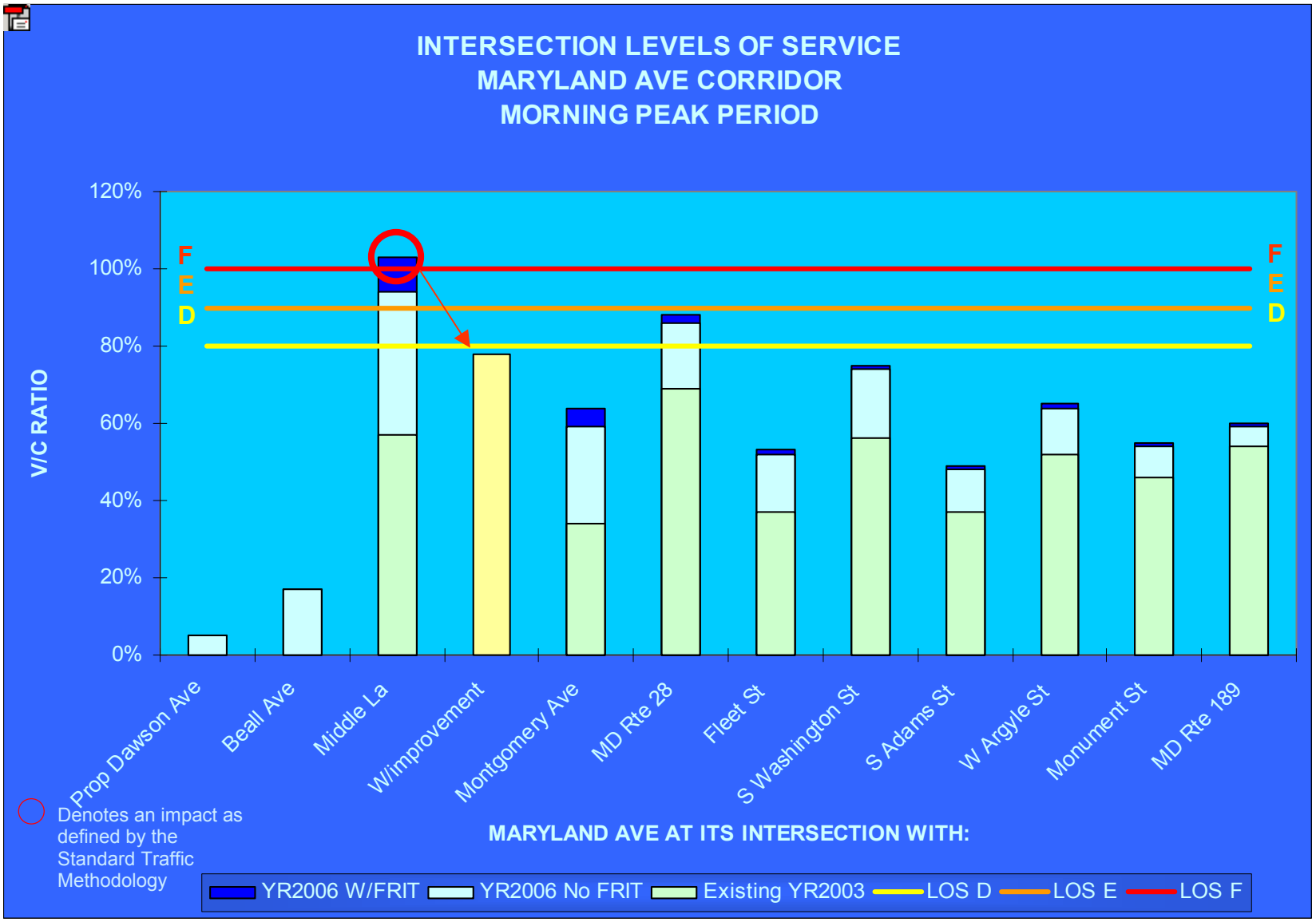
INTERSECTION	INTER-SECTION #	FR SOUTH CLV	FR NORTH CLV	FR WEST CLV	FR EAST CLV	AM CLV TOTAL	AM V/C RATIO	AM LOS
Manakee St. & MD 355	1	1150	1055	0	235	1386	0.83	D
Frederick Ave & MD 355	2	1261	902	186	111	1447	0.87	D
N. Horners Ln & Southlawn Ln	3	544	317	228	277	821	0.51	A
N. Washington & MD 355	4	1194	852	406	139	1739	1.24	F
N. Horners Ln & Lincoln Av	5	541	475	71	107	647	0.40	A
Martins Ln & Manakee St	6	243	194	197	483	726	0.48	A
N. Washington & Martins Ln	7	634	611	226	223	859	0.61	B
Dawson Ave & N. Washington	8	585	432	46	114	699	0.43	A
Maryland Av & Dawson (Fut.)	9	10	0	94	65	104	0.06	A
Dawson Ave & MD 355	10	1002	791	250	300	1302	0.78	C
Beall Ave & N. Washington	11	596	563	250	179	846	0.56	A
Beall Av & Market St (Fut.)	12	0	0	137	290	290	0.18	A
Maryland Av & Beall (Fut.)	13	393	437	215	216	654	0.40	A
Beall Ave & MD 355	14	879	924	250	477	1401	0.87	D
W. Middle Ln & N. Washington	15	434	214	558	170	992	0.66	B
Market St & Middle Ln (Fut.)	16	94	45	216	522	616	0.38	A
Maryland Av & Middle Ln	17	354	444	752	789	1587	0.99	E
Middle Ln & RCI St (Fut.)	18	900	842	755	755	1655	1.03	F
Middle Ln & Monroe St	19	355	183	611	805	1160	0.72	C
E. Middle Ln & MD 355	20	1087	959	613	216	1700	1.09	F
Park Rd & N. Stonestreet	21	78	82	573	565	655	0.43	A
Park Rd & S. Stonestreet	22	0	439	354	123	916	0.61	B
N. Adams St & W. Montgomery Av	23	22	76	569	687	763	0.47	A
W. Montgomery & N. Washington	24	159	611	161	651	1262	0.76	C
Maryland Av & E. Montgomery Av	25	711	694	474	537	1248	0.78	C
RCI St & E. Montgomery (Fut.)	26	295	465	226	405	870	0.54	A
Monroe St & E. Montgomery Av	27	336	387	649	565	1036	0.64	B
Monroe St & Monroe Pl & COB	28	417	645	263	299	943	0.58	A
MD 355 & Church St & Monroe Pl	29	976	881	359	377	1353	0.81	D
Manakee St & MD 28	30	0	0	1375	1889	1889	1.18	F
W. Montgomery Av & Laird St	31	32	95	1295	1570	1666	1.00	F
W. Jefferson & Great Falls Rd	32	273	322	680	1413	1734	1.15	F
N. Adams St & W. Jefferson St	33	7	0	529	663	670	0.41	A
Jefferson St & N. Washington	34	370	322	686	830	1200	0.72	C
Jefferson St & Maryland Ave	35	529	866	747	789	1655	1.03	F
Jefferson St & Monroe St	36	776	734	751	684	1527	0.95	E
MD 355 & W. Jefferson & Viers Mill	37	1324	911	511	335	1836	1.22	F
Rose Petal Wy & Great Falls Rd	38	32	33	328	502	535	0.33	A
Maryland Av & Fleet St	39	429	631	21	593	1245	0.88	D
Fleet St & Monroe St	40	138	237	403	592	829	0.55	A
Jefferson Plaza & Fleet St	41	65	193	155	293	486	0.30	A
Falls Road & Maryland Av	42	27	46	463	1258	1304	0.84	D
Monument St & Maryland Av	43	6	11	867	973	983	0.61	B
Maryland Av & W. Argyle St	44	164	161	809	864	1028	0.68	B
S. Adams St & Maryland Av	45	2	6	795	844	851	0.53	A
S. Washington St & Maryland Av	46	132	482	842	1263	1745	1.09	F
Fleet St & Richard Montgomery Dr	47	528	190	53	297	824	0.51	A
MD 355 & Richard Montgomery Dr	48	875	966	193	288	1254	0.75	C
MD 355 & Dodge St	49	709	743	258	20	1001	0.62	B
Monroe St & Mt Vernon Pl	50	202	238	74	133	371	0.23	A
Mt Vernon Pl & E. Jefferson St	51	14	6	105	132	146	0.09	A
Fleet St & Mt Vernon Pl	52	211	175	275	298	509	0.31	A
MD 355 & Mt Vernon Pl	53	923	1050	144	39	1194	0.74	C
E. Jefferson St & Ritchie Pk	54	24	45	57	69	114	0.07	A
Fleet St & Ritchie Pk (fut.)	55	175	167	44	11	219	0.13	A
Fleet St & Wootton Pk	56	55	0	740	530	795	0.49	A
MD 355 & First St & Wootton Pk	57	923	930	588	244	1763	1.13	F
Viers Mill Rd & First St	58	967	998	1004	382	2002	1.29	F
Wootton Pk & W. Edmonston Dr	59	586	412	221	0	807	0.53	A
MD 355 & W. Edmonston Dr.	60	1038	1160	465	301	1625	1.04	F

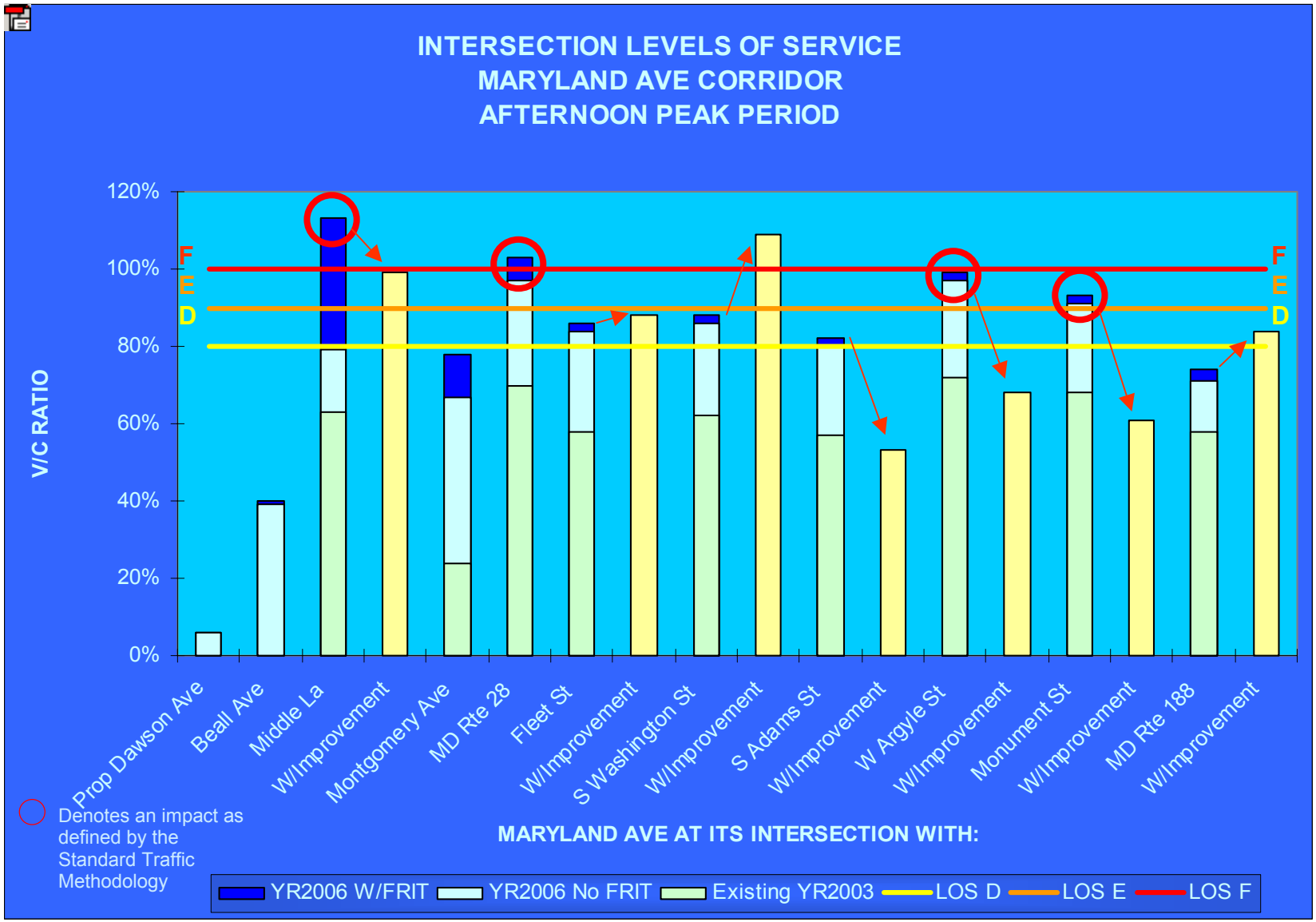
Attachment H: MD 28 Corridor



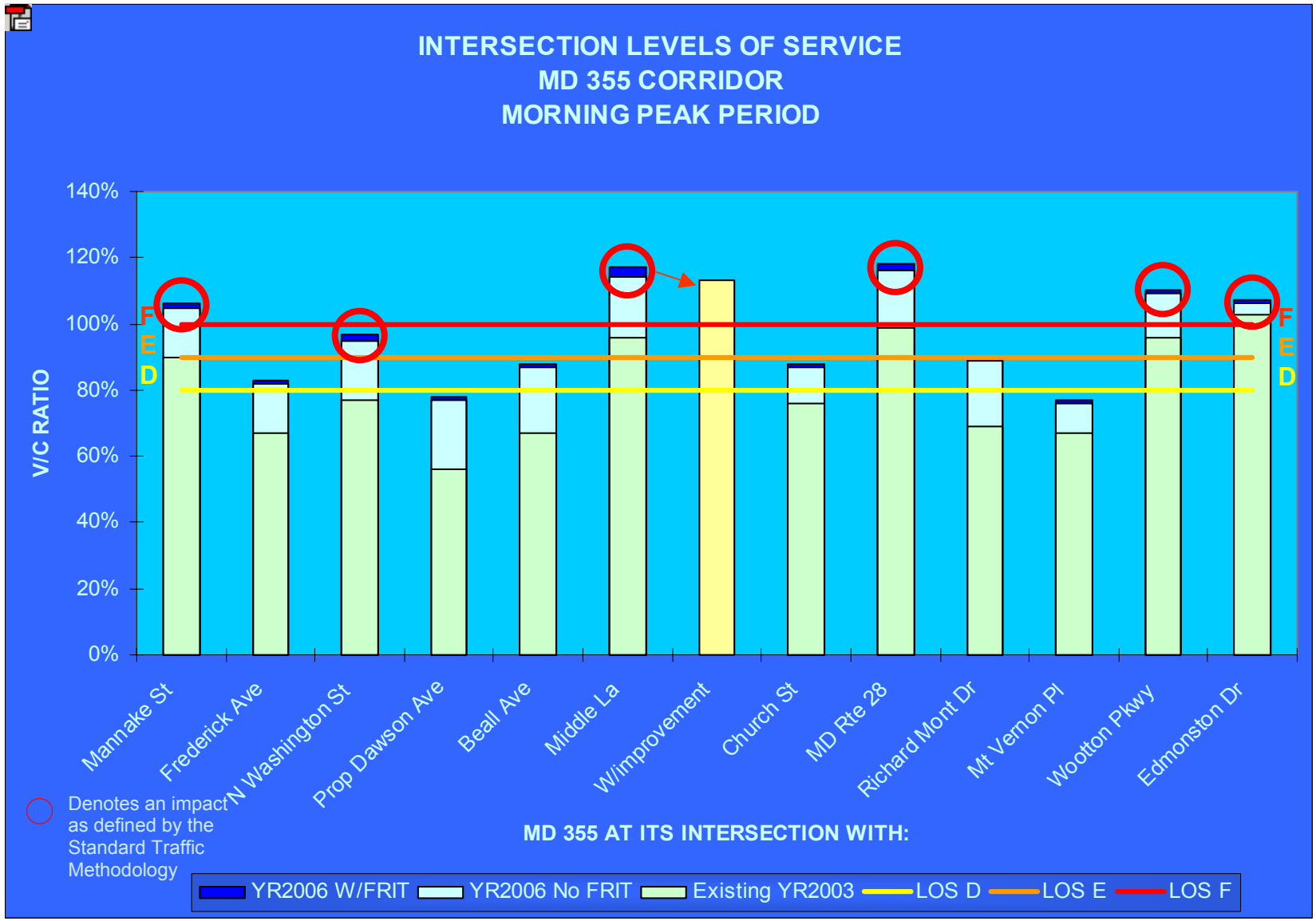

INTERSECTION LEVELS OF SERVICE
MD 28 CORRIDOR
AFTERNOON PEAK PERIOD
V/C RATIO
160%
140%
120%
100%
80%
60%
40%
20%
0%
F
E
D
Mannake St
W/Improvement
Laird St
W/Improvement
MD Rte 189
W/Improvement
Adams St
W/Improvement
Washington St
W/Improvement
Maryland Ave
Monroe St
MD Rte 355
Dodge St
MD Rte 585
W/Improvement
Denotes an impact as defined by the Standard Traffic Methodology
MD 28 AT ITS INTERSECTION WITH:
YR2006 W/FRIT
YR2006 No FRIT
Existing YR2003
LOS D
LOS E
LOS F

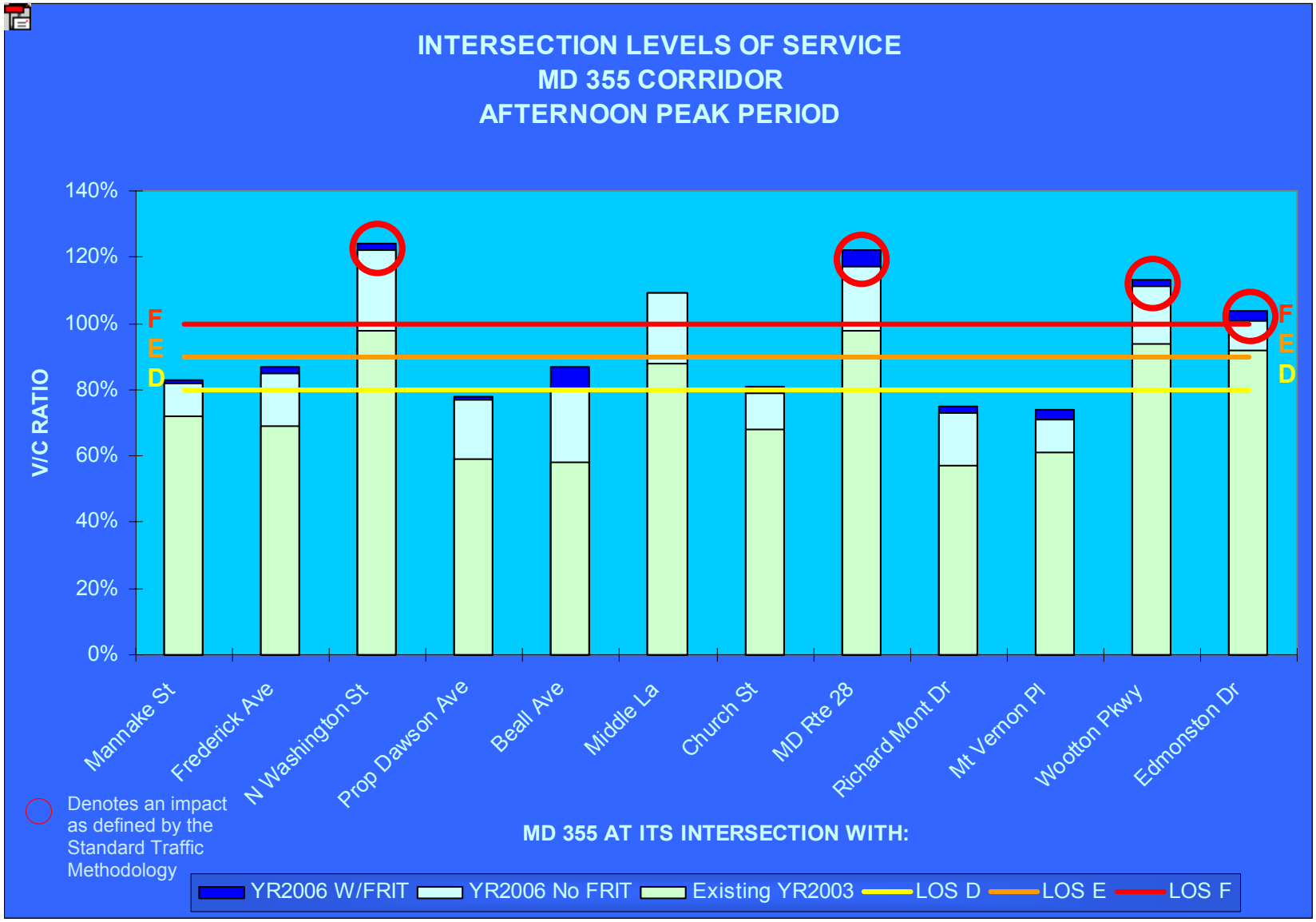
Attachment I: Maryland Ave. Corridor



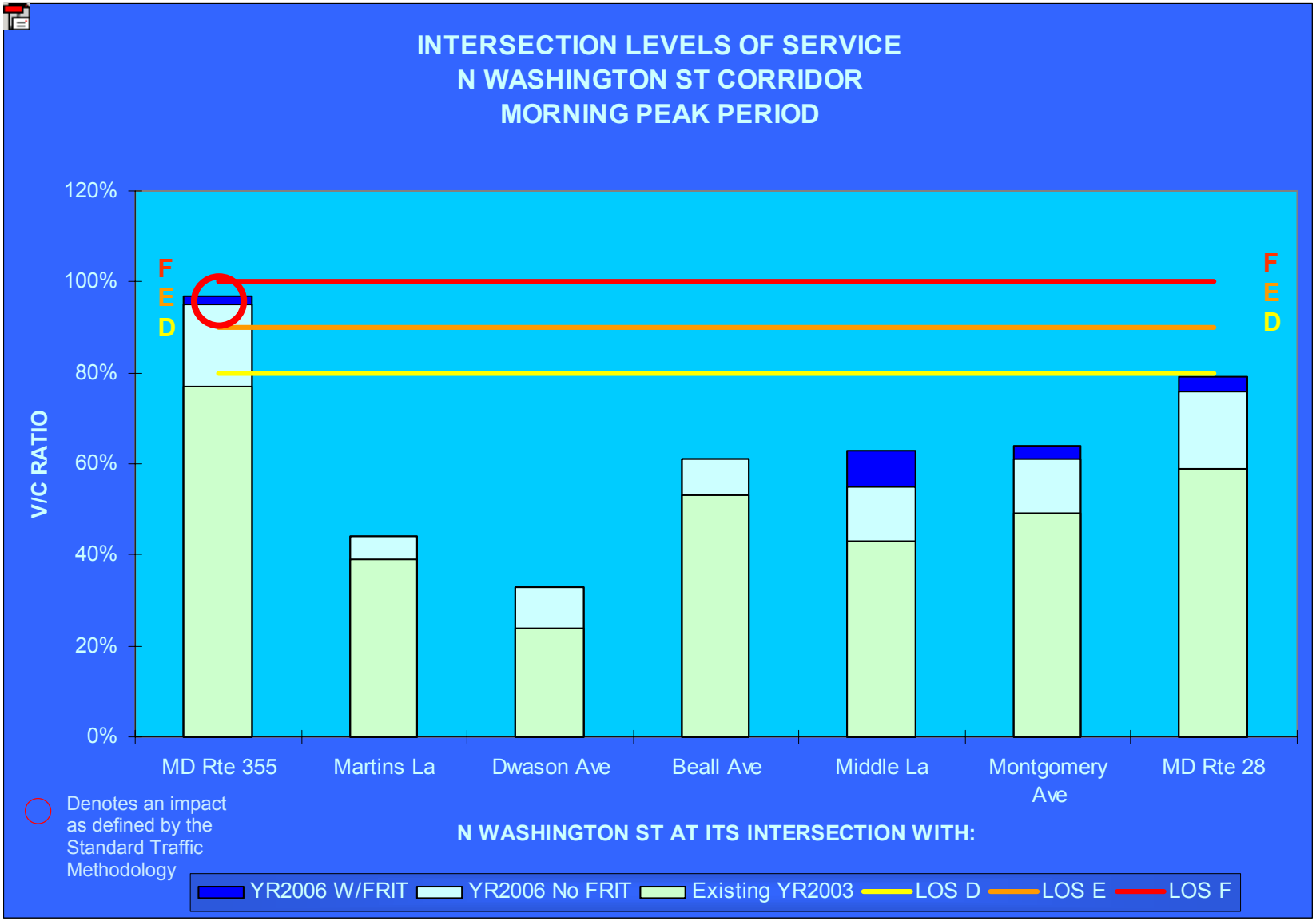

INTERSECTION LEVELS OF SERVICE
MARYLAND AVE CORRIDOR
AFTERNOON PEAK PERIOD
V/C RATIO
120%
100%
80%
60%
40%
20%
0%
F
E
D
Prop Dawson Ave
Beall Ave
Middle La
W/Improvement
Montgomery Ave
MD Rte 28
Fleet St
W/Improvement
S Washington St
W/Improvement
S Adams St
W/Improvement
W Argyle St
W/Improvement
Monument St
W/Improvement
MD Rte 188
W/Improvement
Denotes an impact as defined by the Standard Traffic Methodology
MARYLAND AVE AT ITS INTERSECTION WITH:
YR2006 W/FRIT
YR2006 No FRIT
Existing YR2003
LOS D
LOS E
LOS F

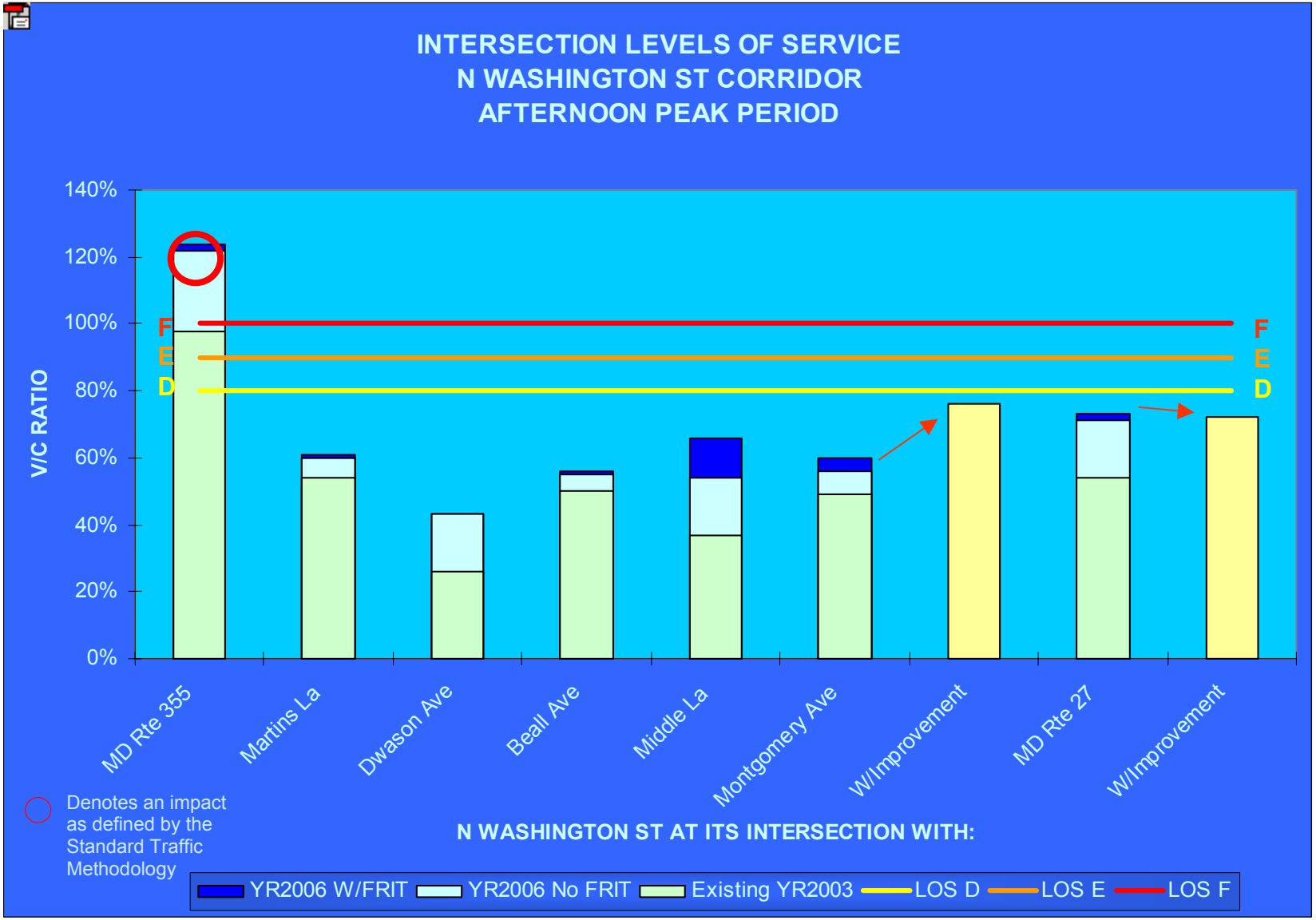
Attachment J: MD 355 Corridor



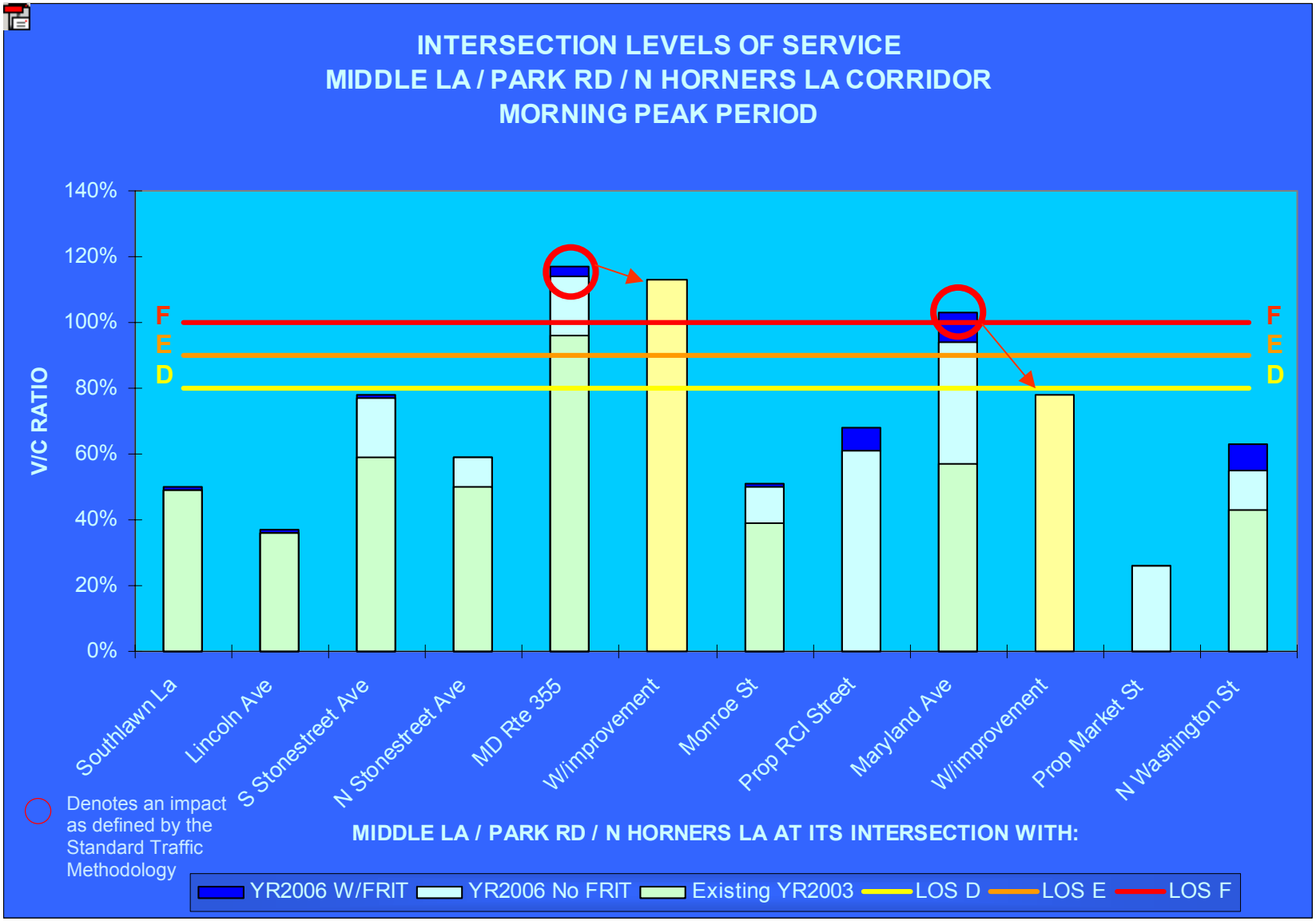

INTERSECTION LEVELS OF SERVICE
MD 355 CORRIDOR
AFTERNOON PEAK PERIOD
V/C RATIO
140%
120%
100%
80%
60%
40%
20%
0%
F
E
D
Mannake St
Frederick Ave
N Washington St
Prop Dawson Ave
Beall Ave
Middle La
Church St
MD Rte 28
Richard Mont Dr
Mt Vernon Pl
Wootton Pkwy
Edmonston Dr
Denotes an impact as defined by the Standard Traffic Methodology
MD 355 AT ITS INTERSECTION WITH:
YR2006 W/FRIT
YR2006 No FRIT
Existing YR2003
LOS D
LOS E
LOS F

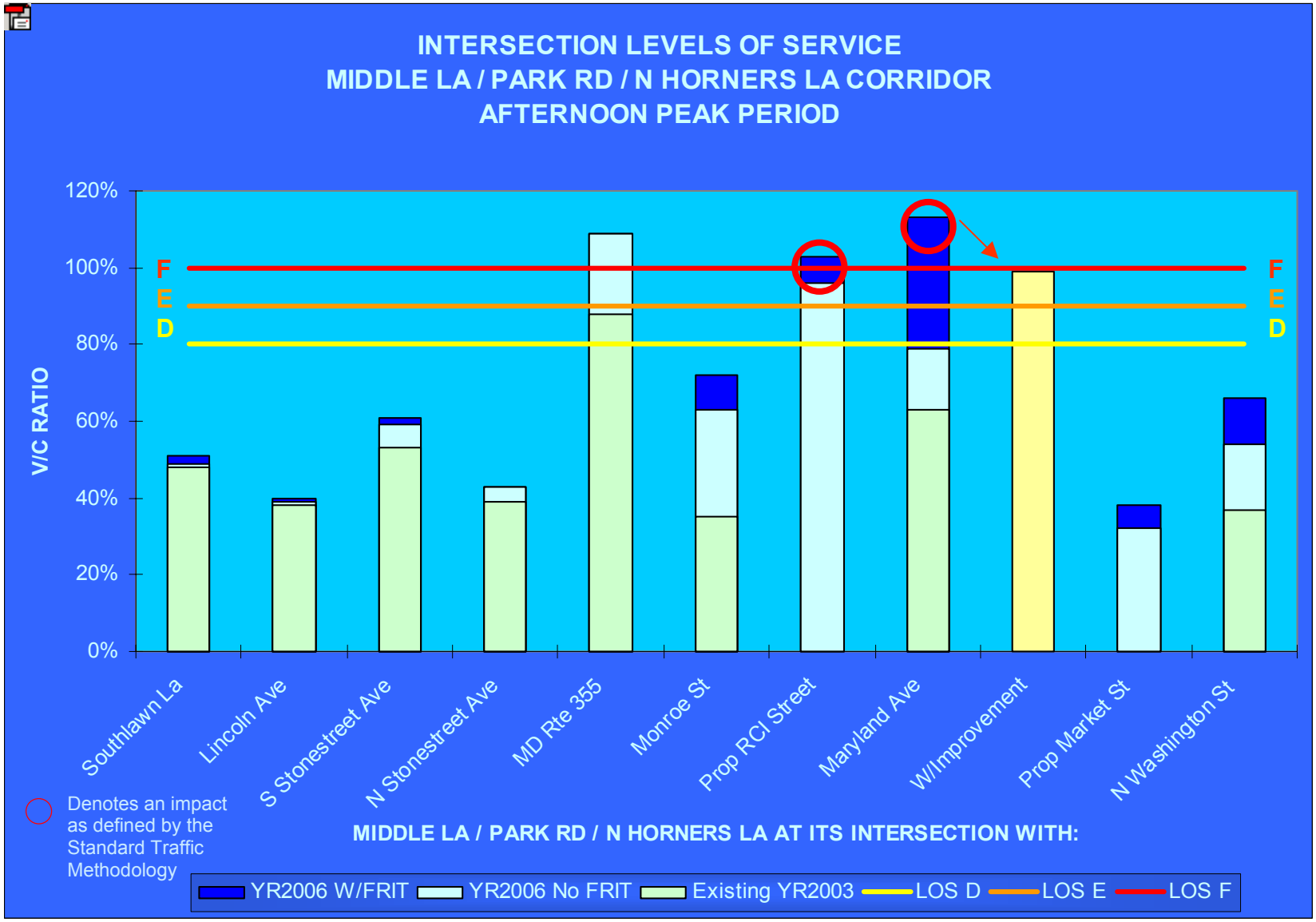
Attachment K: North Washington St. Corridor



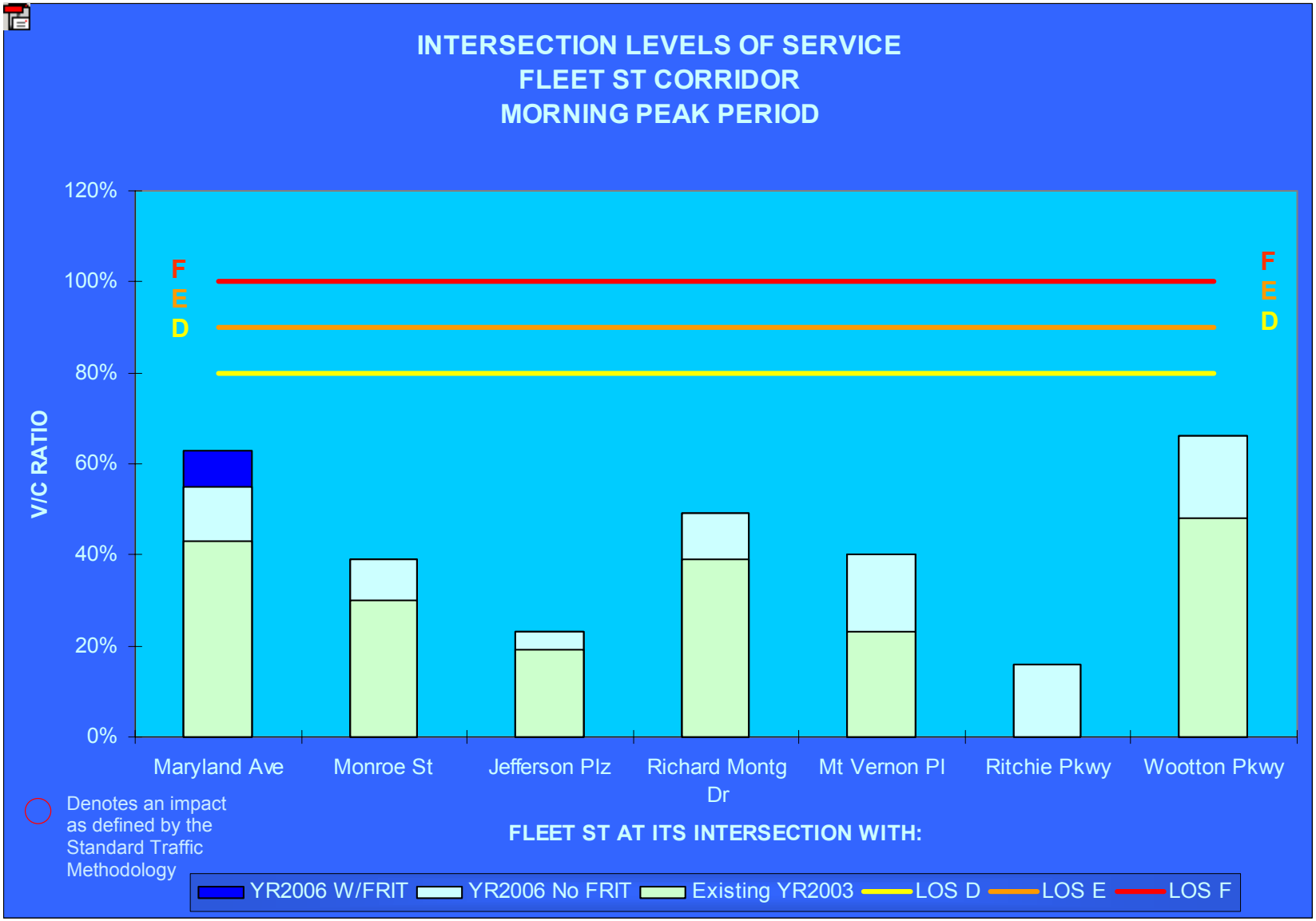

INTERSECTION LEVELS OF SERVICE
N WASHINGTON ST CORRIDOR
AFTERNOON PEAK PERIOD
V/C RATIO
140%
120%
100%
80%
60%
40%
20%
0%
F
E
D
MD Rte 355
Martins La
Dwason Ave
Beall Ave
Middle La
Montgomery Ave
W/Improvement
MD Rte 27
W/Improvement
Denotes an impact as defined by the Standard Traffic Methodology
N WASHINGTON ST AT ITS INTERSECTION WITH:
YR2006 W/FRIT
YR2006 No FRIT
Existing YR2003
LOS D
LOS E
LOS F

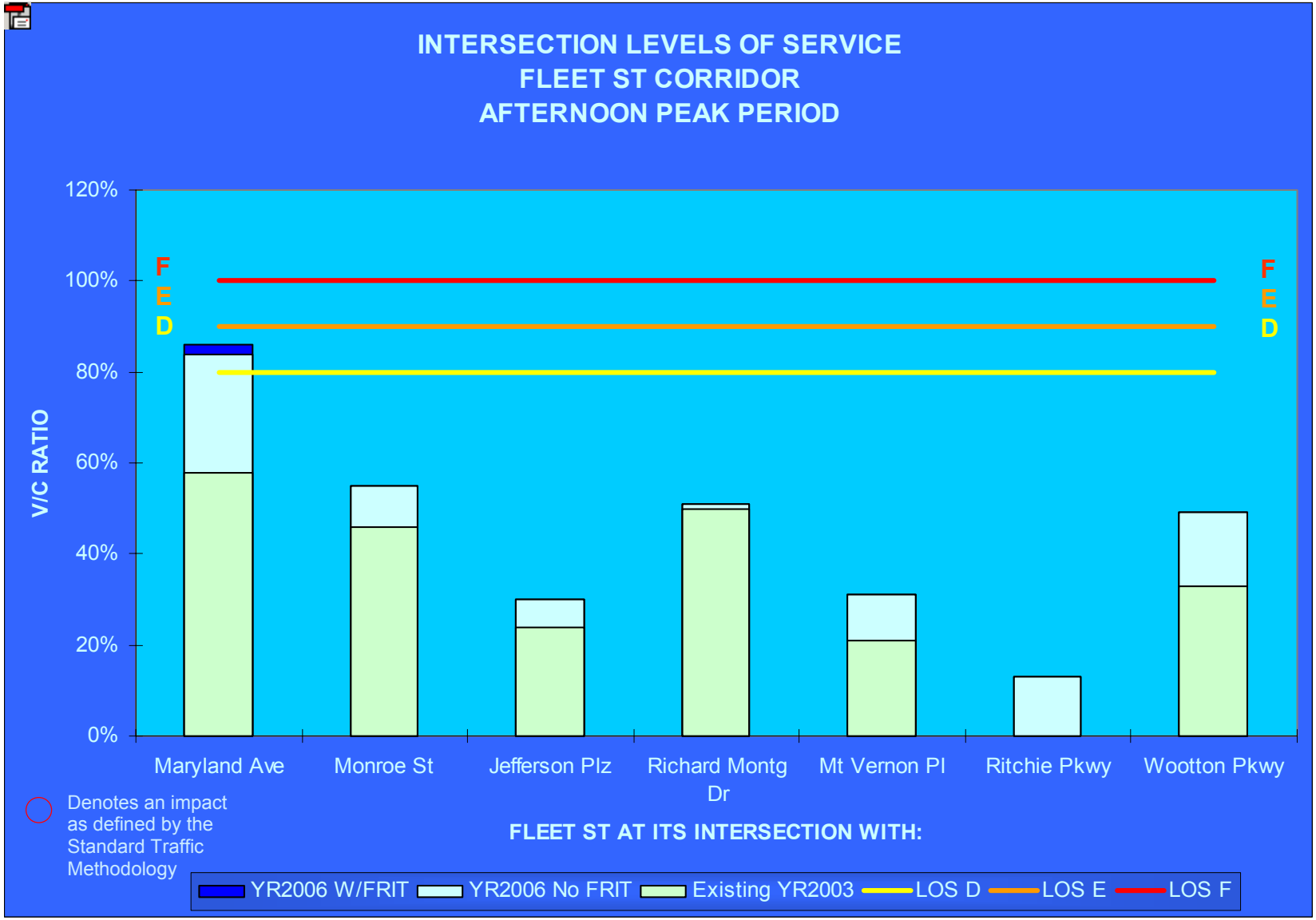
Attachment L: Middle Lane / Park Rd. / N. Horners Lane Corridor



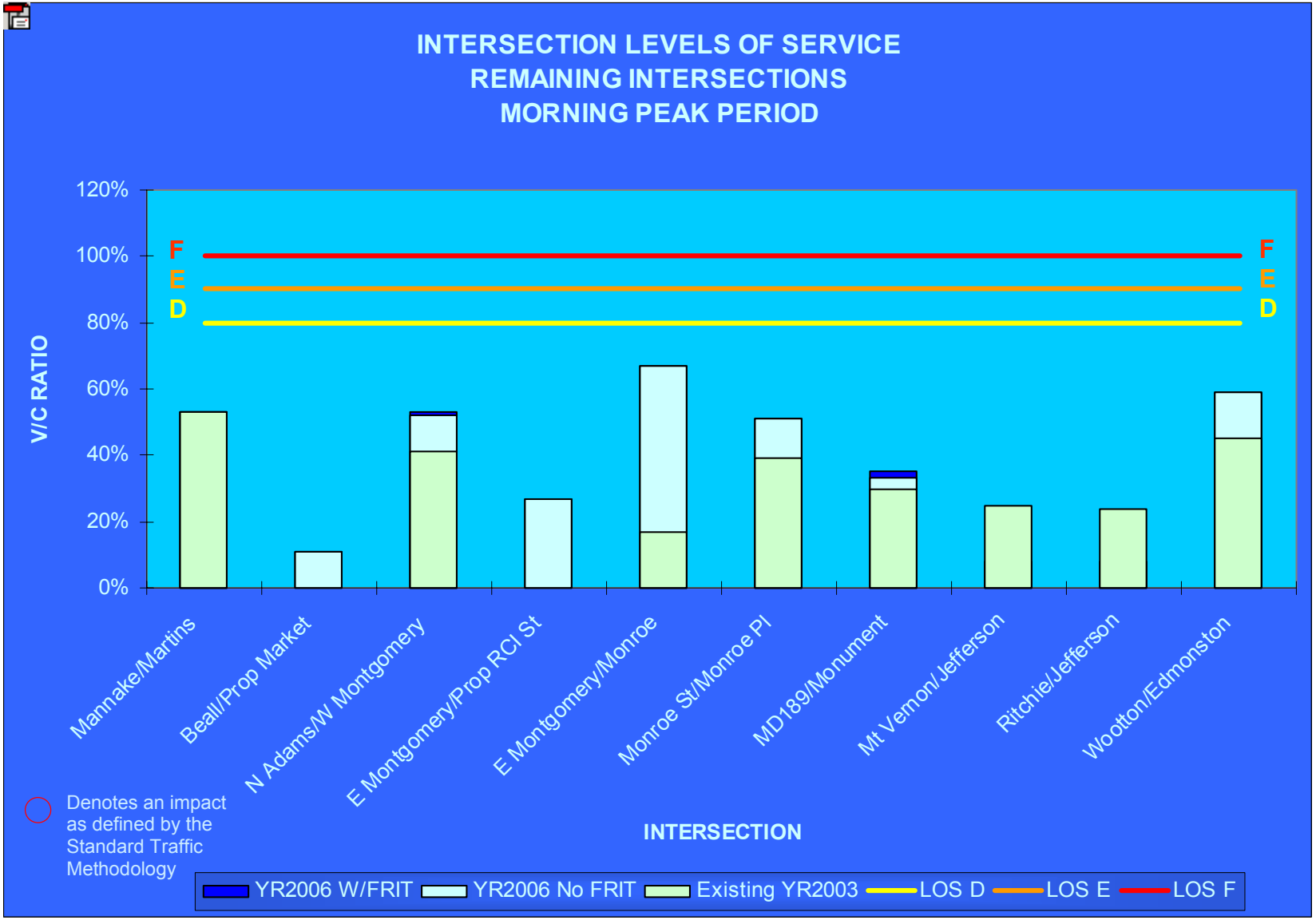

INTERSECTION LEVELS OF SERVICE
MIDDLE LA / PARK RD / N HORNERS LA CORRIDOR
AFTERNOON PEAK PERIOD
V/C RATIO
120%
100%
80%
60%
40%
20%
0%
F
E
D
F
E
D
Southlawn La
Lincoln Ave
S Stonestreet Ave
N Stonestreet Ave
MD Rte 355
Monroe St
Prop RCI Street
Maryland Ave
W/Improvement
Prop Market St
N Washington St
Denotes an impact as defined by the Standard Traffic Methodology
MIDDLE LA / PARK RD / N HORNERS LA AT ITS INTERSECTION WITH:
YR2006 W/FRIT
YR2006 No FRIT
Existing YR2003
LOS D
LOS E
LOS F

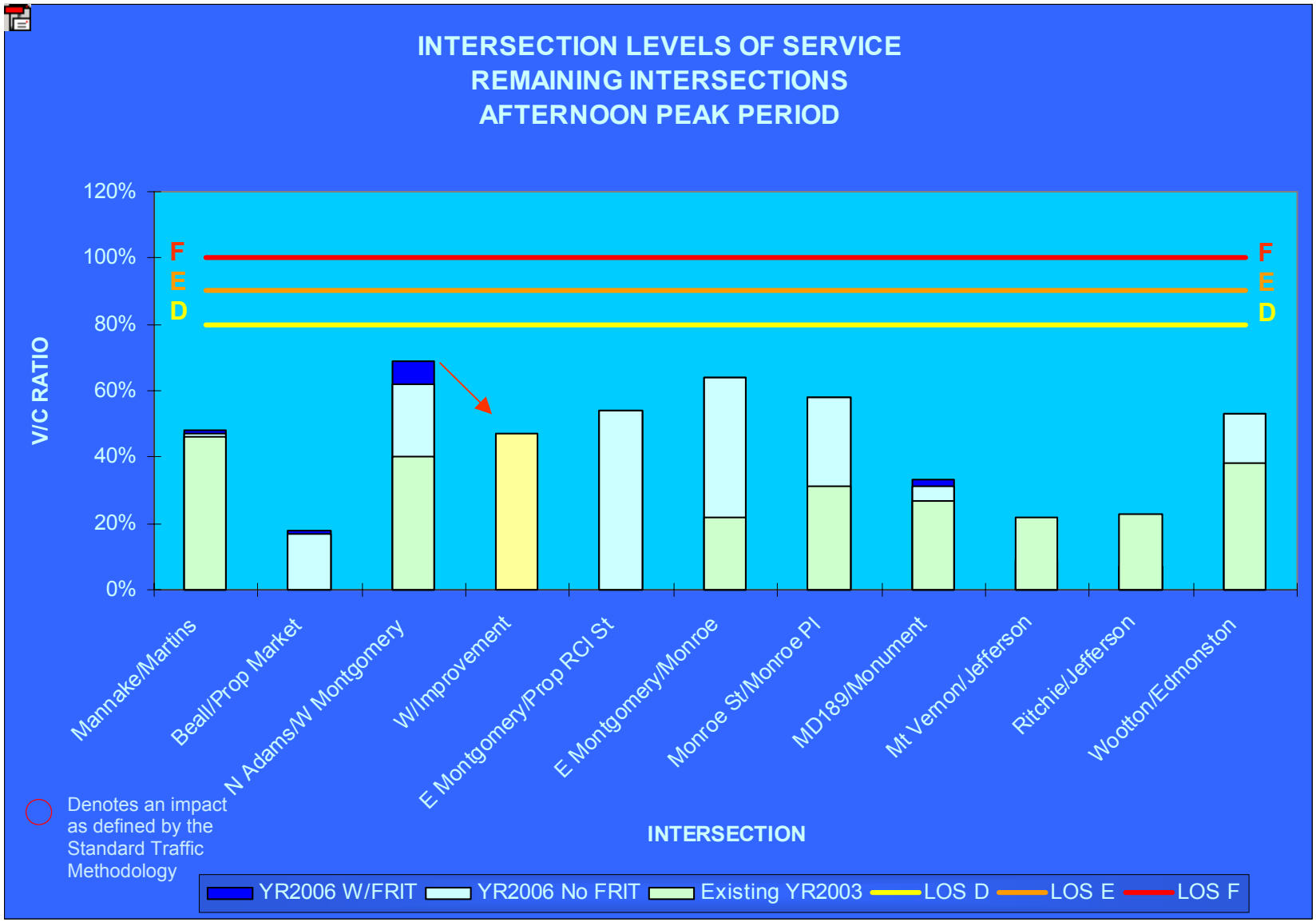
Attachment M: Fleet St. Corridor




INTERSECTION LEVELS OF SERVICE
FLEET ST CORRIDOR
AFTERNOON PEAK PERIOD
V/C RATIO
120%
100%
80%
60%
40%
20%
0%
F
E
D
F
E
D
Maryland Ave
Monroe St
Jefferson Plz
Richard Montg Dr
Mt Vernon Pl
Ritchie Pkwy
Wootton Pkwy
Denotes an impact as defined by the Standard Traffic Methodology
FLEET ST AT ITS INTERSECTION WITH:
YR2006 W/FRIT
YR2006 No FRIT
Existing YR2003
LOS D
LOS E
LOS F

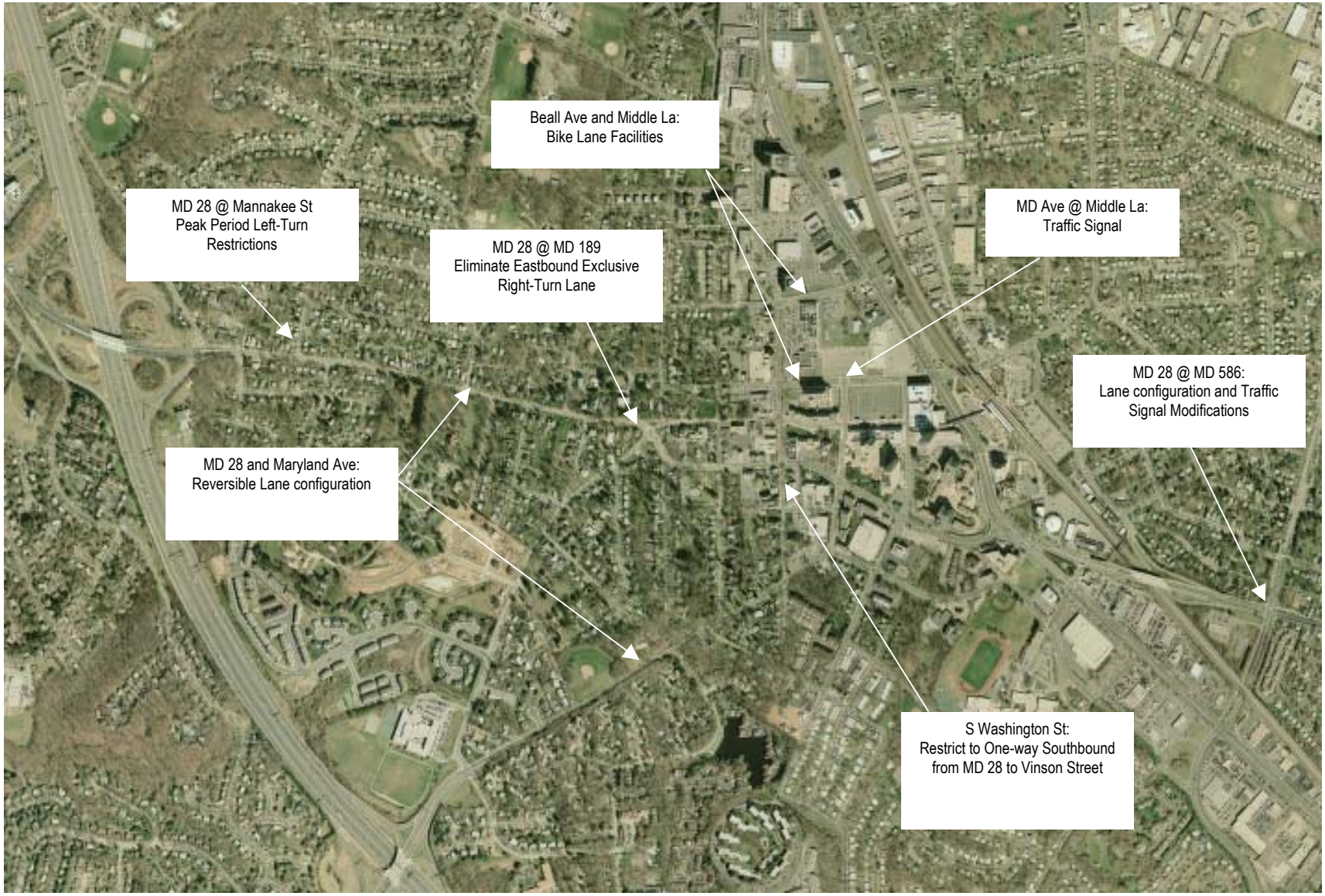
Attachment N: Remaining Intersections



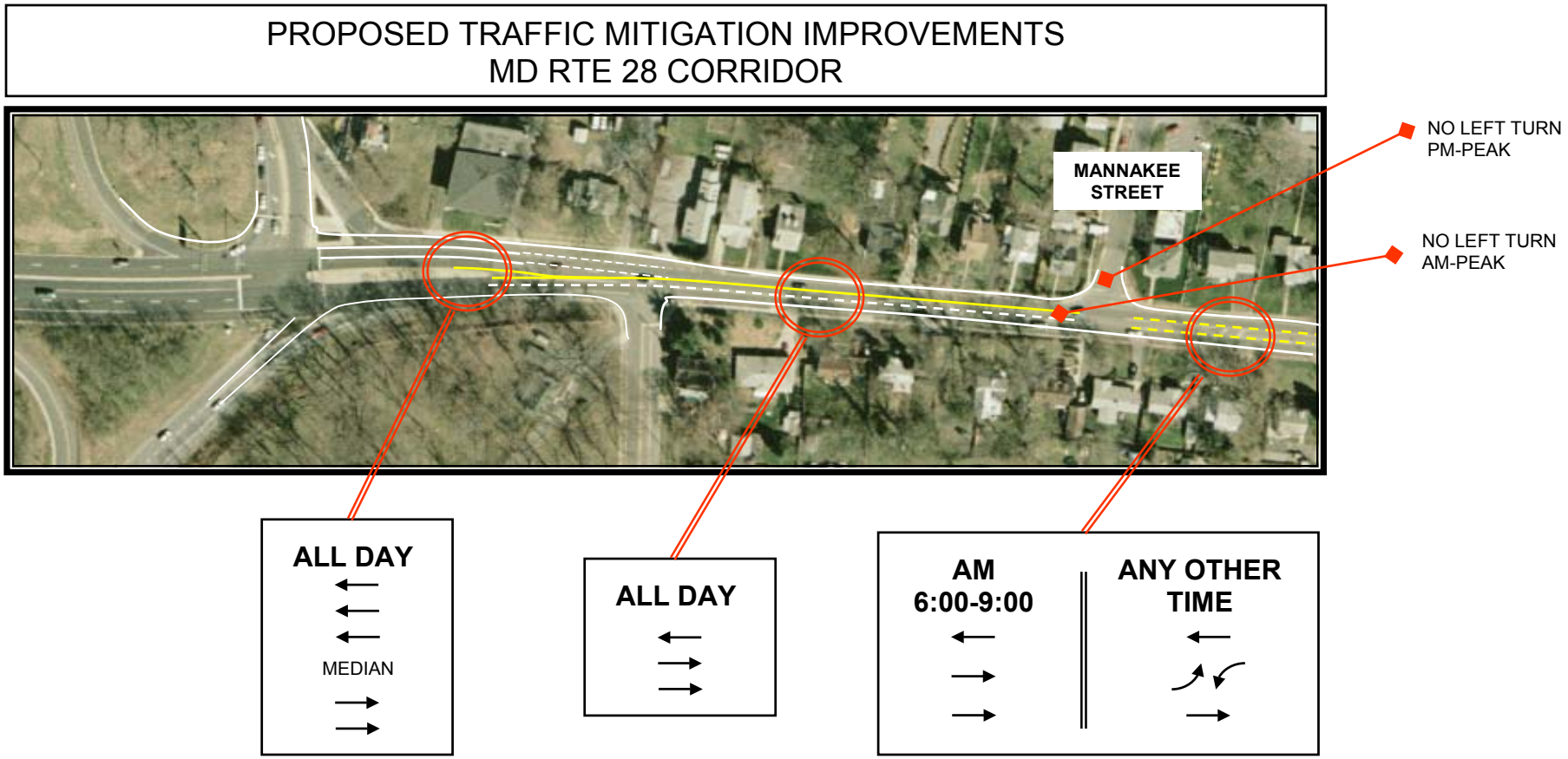

INTERSECTION LEVELS OF SERVICE
REMAINING INTERSECTIONS
AFTERNOON PEAK PERIOD
V/C RATIO
120%
100%
80%
60%
40%
20%
0%
F
E
D
F
E
D
Mannake/Martins
Beall/Prop Market
N Adams/W Montgomery
W/Improvement
E Montgomery/Prop RCI St
E Montgomery/Monroe
Monroe St/Monroe Pl
MD189/Monument
Mt Vernon/Jefferson
Ritchie/Jefferson
Wootton/Edmonston
INTERSECTION
Denotes an impact as defined by the Standard Traffic Methodology
YR2006 W/FRIT
YR2006 No FRIT
Existing YR2003
LOS D
LOS E
LOS F

Traffic Mitigation

Attachment O: Proposed Traffic Mitigation Sites

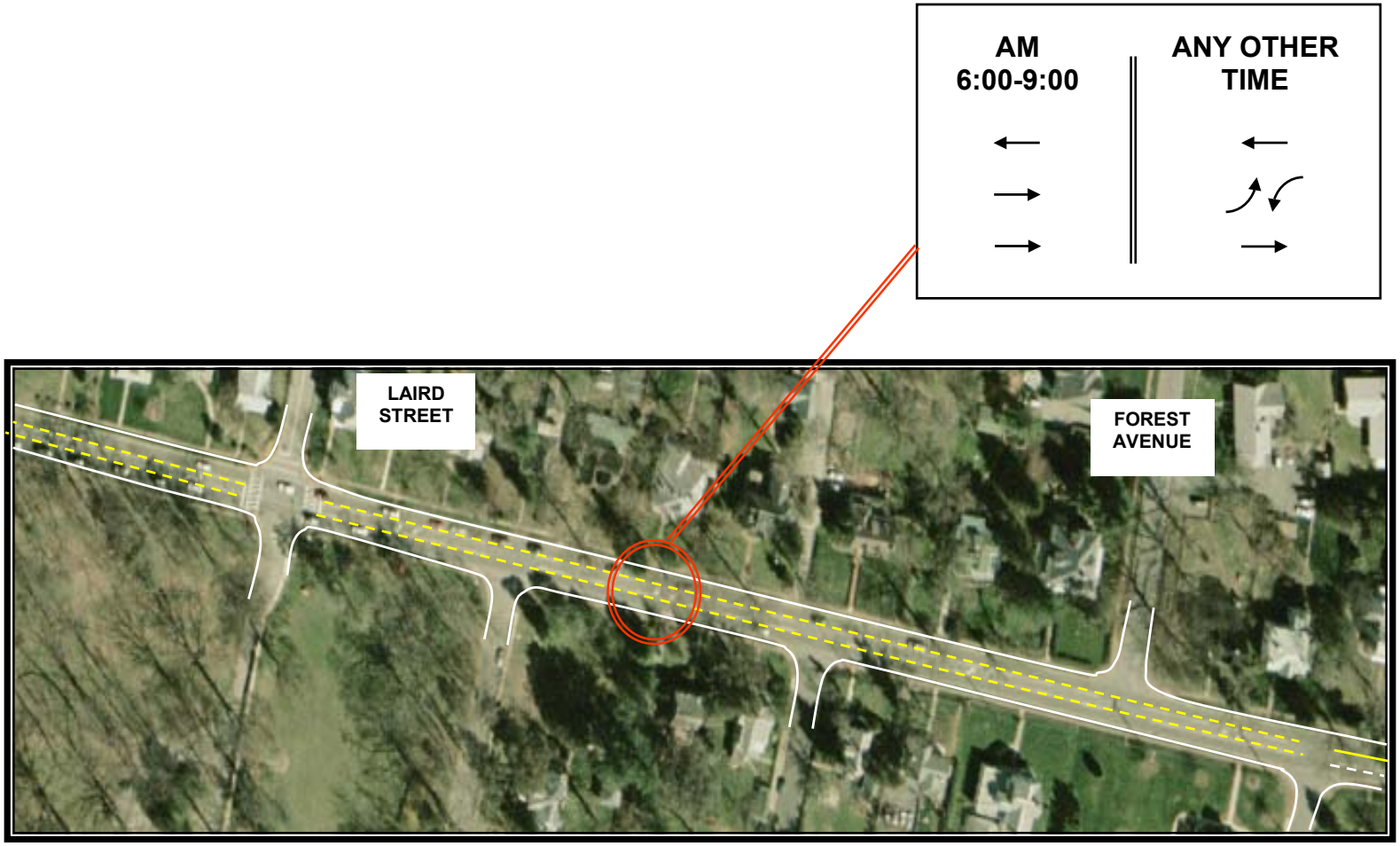


Attachment P: MD Rte 28 Corridor

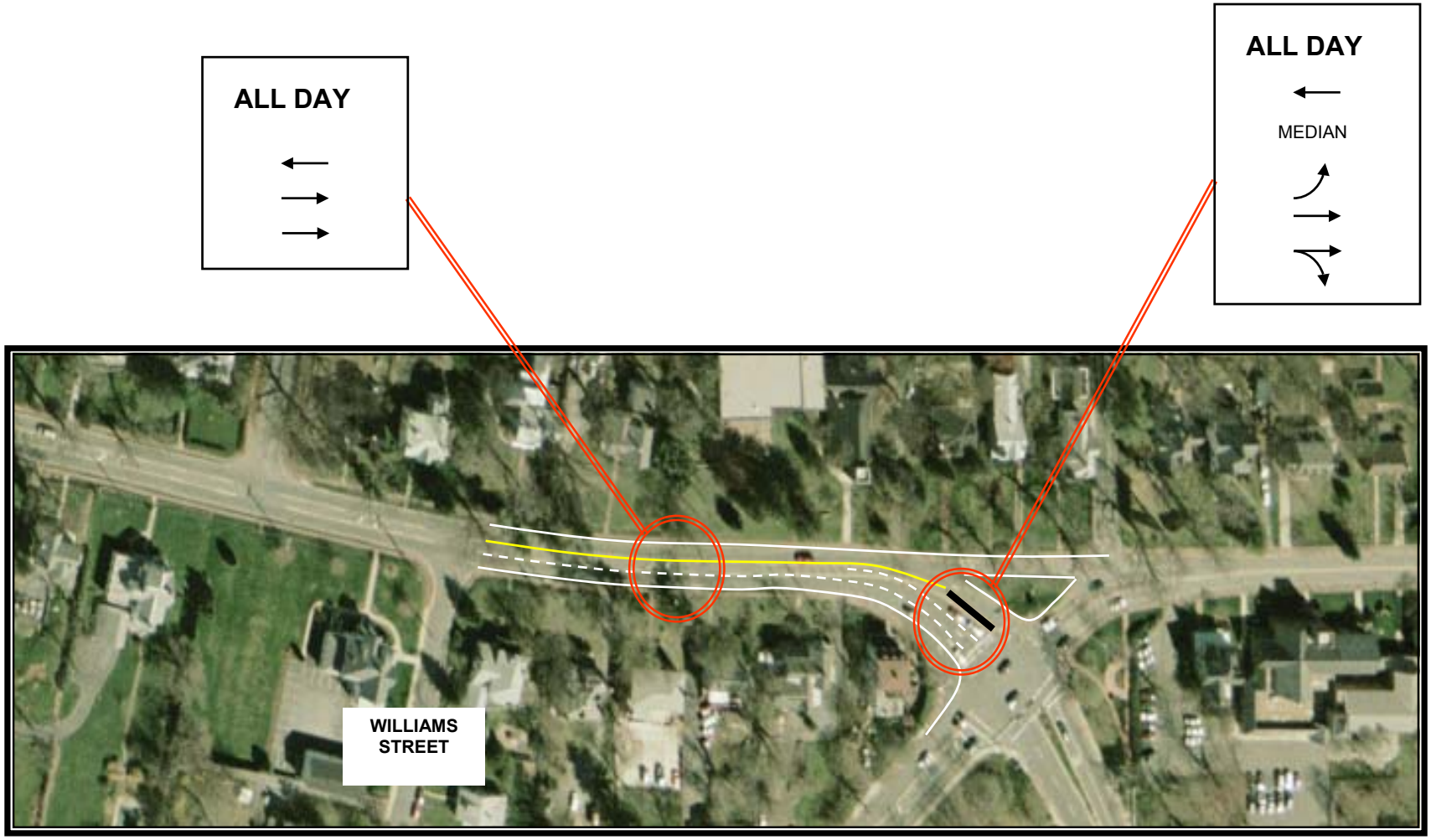


Attachment P: MD Rte 28 Corridor (Continued)

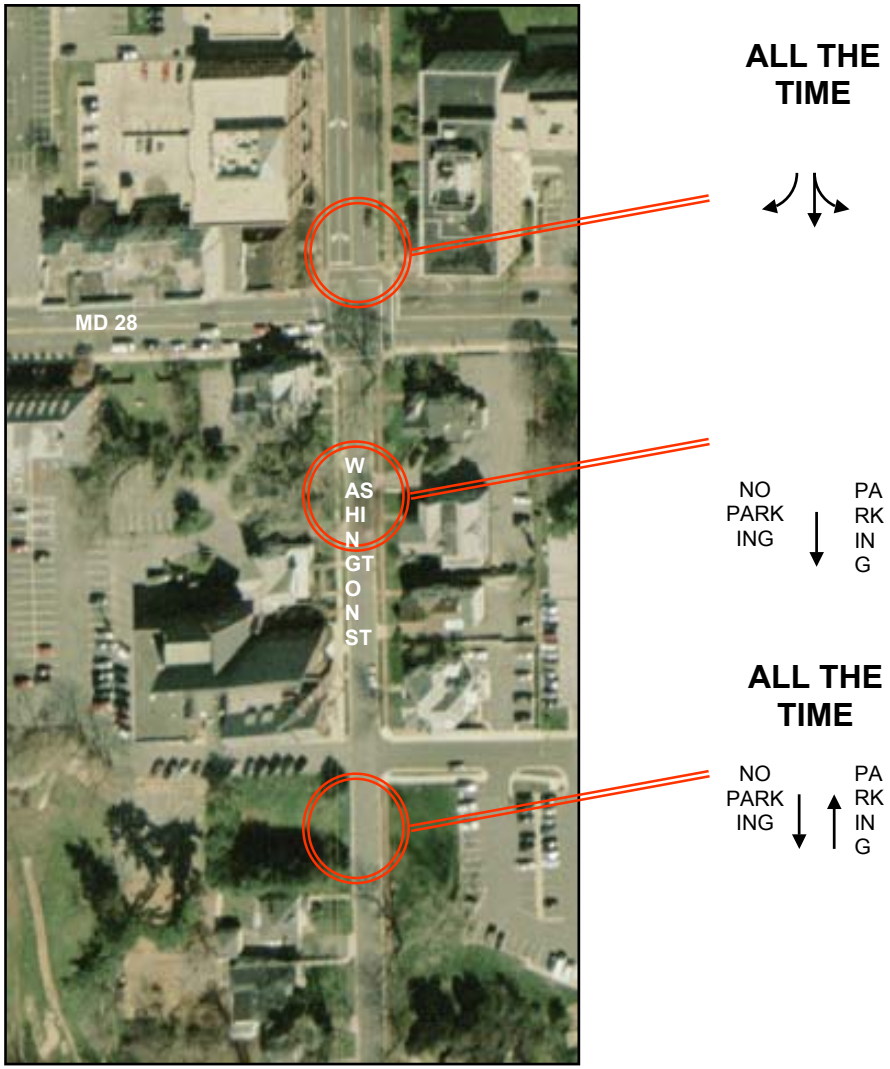
Attachment P: MD Rte 28 Corridor (Continued)



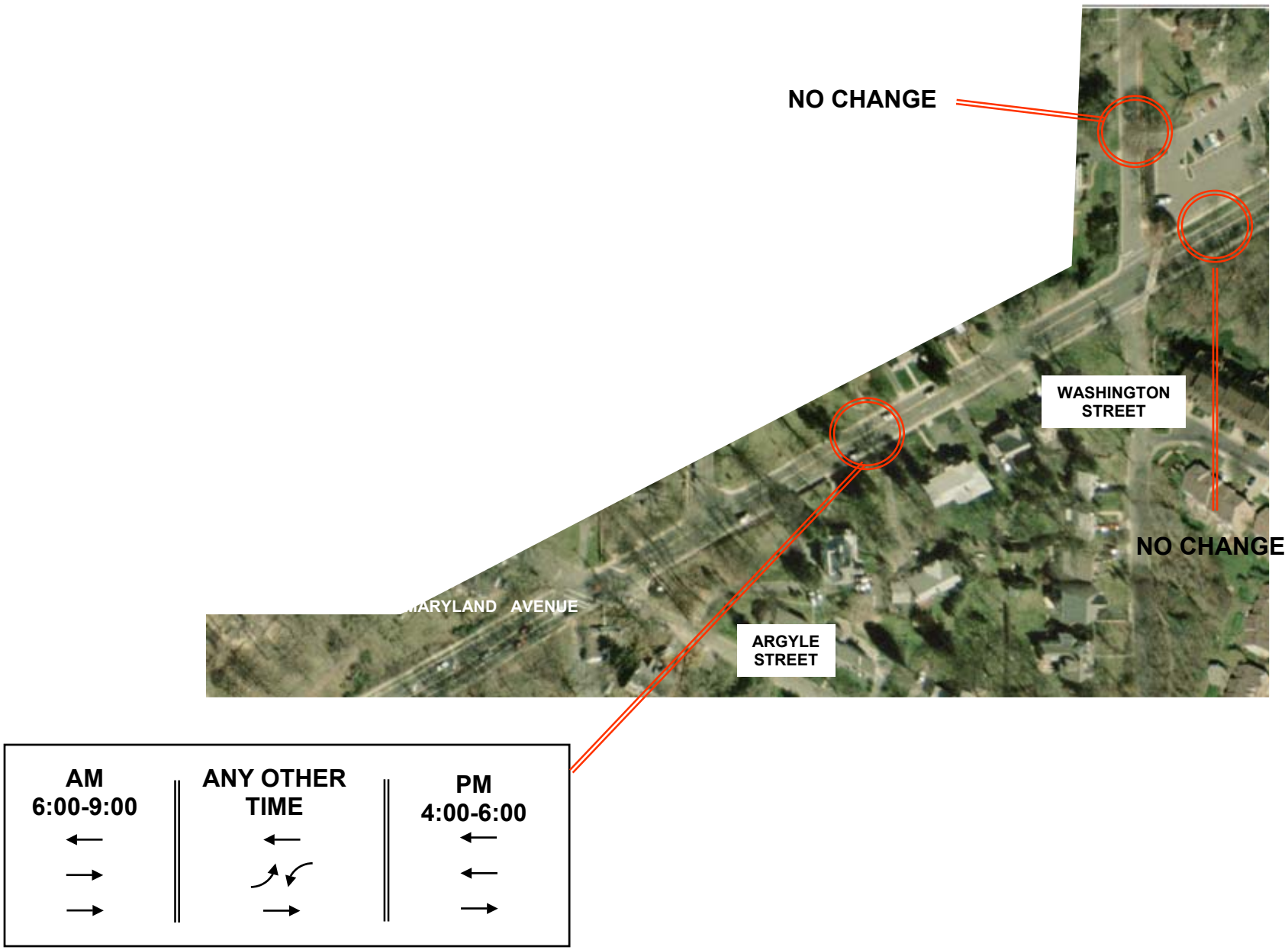
Attachment P: MD Rte 28 Corridor (Continued)



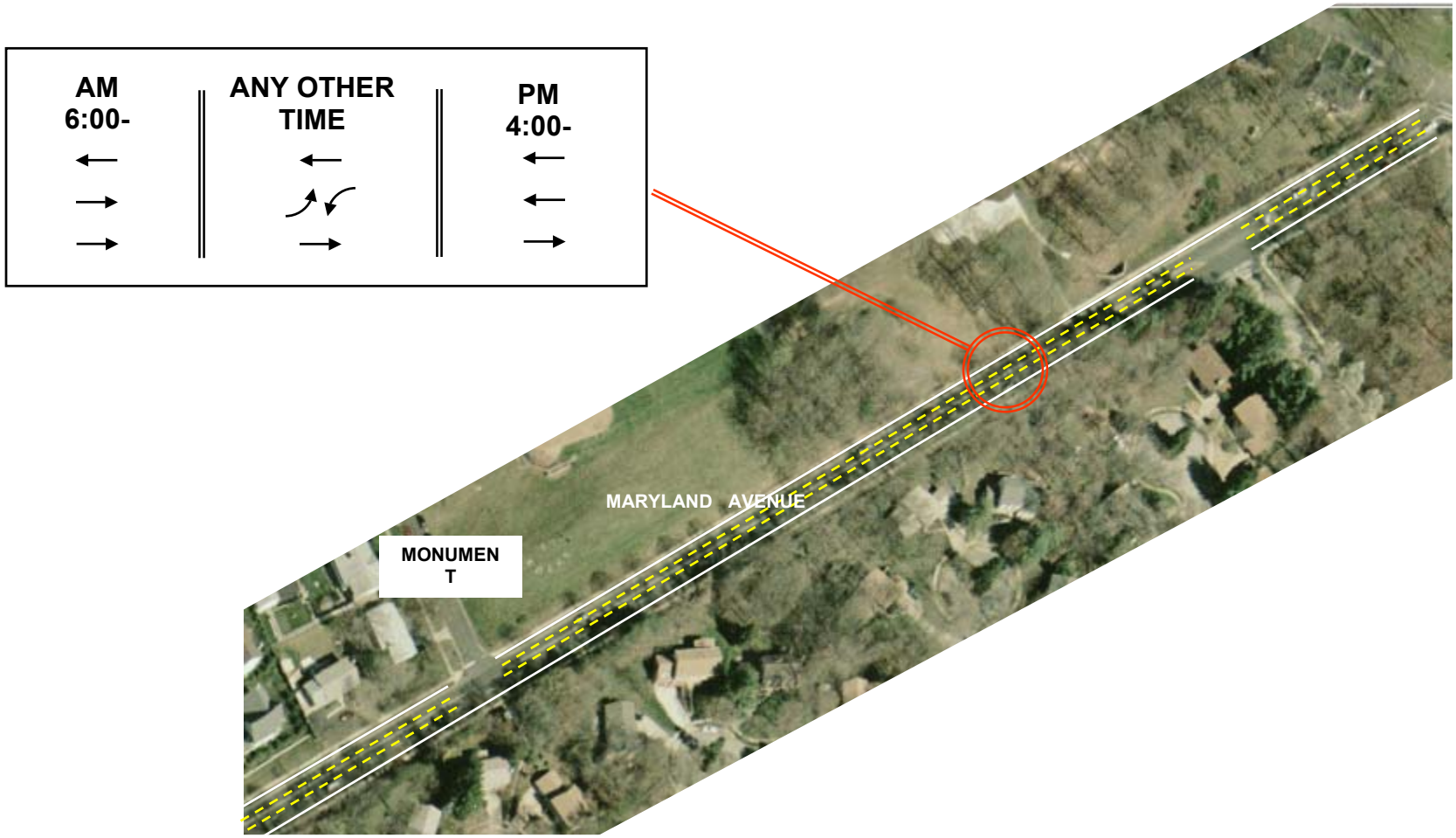
Attachment Q: Maryland Avenue Corridor



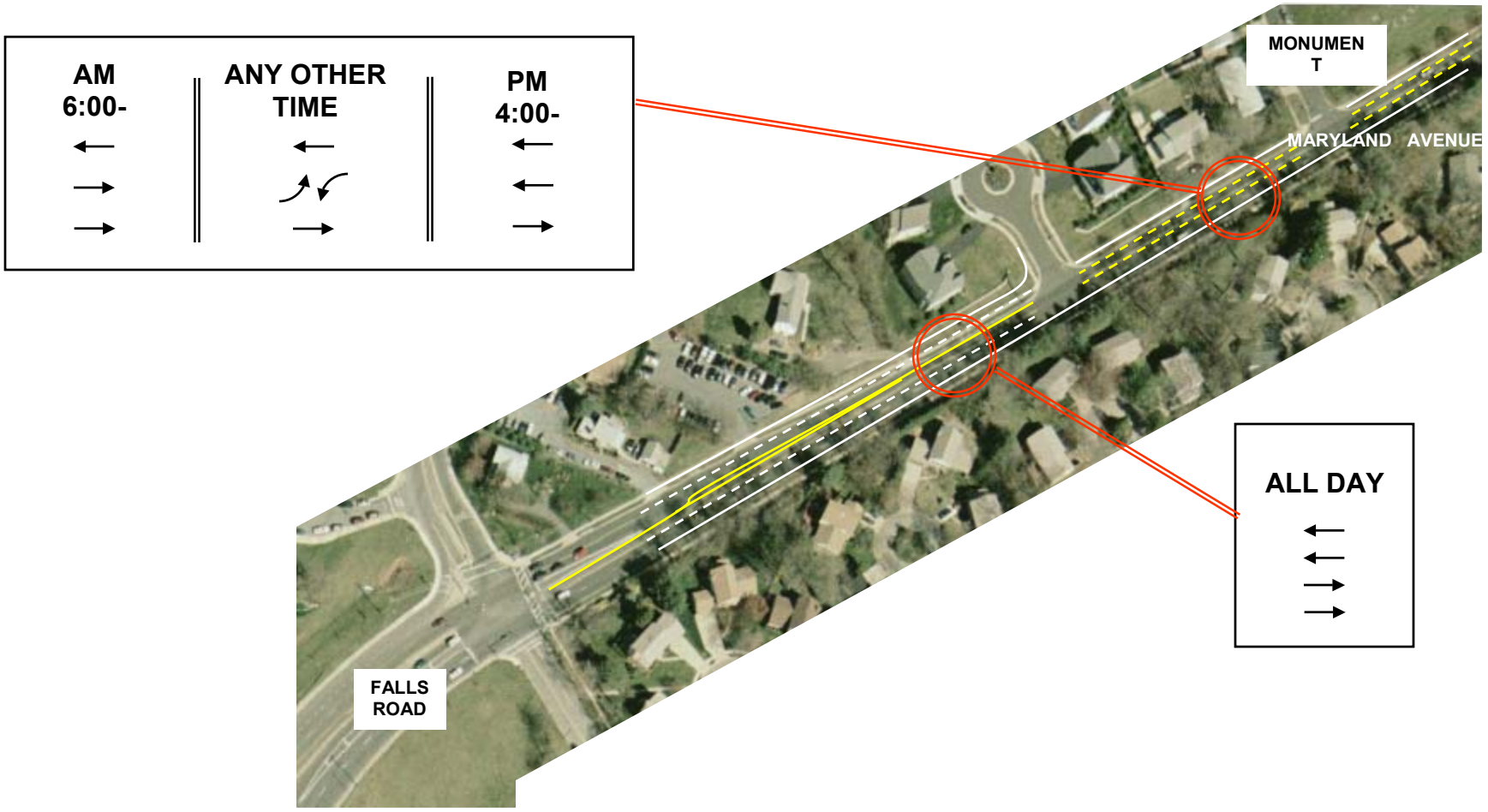
Attachment Q: Maryland Avenue Corridor (Continued)



Attachment Q: Maryland Avenue Corridor (Continued)

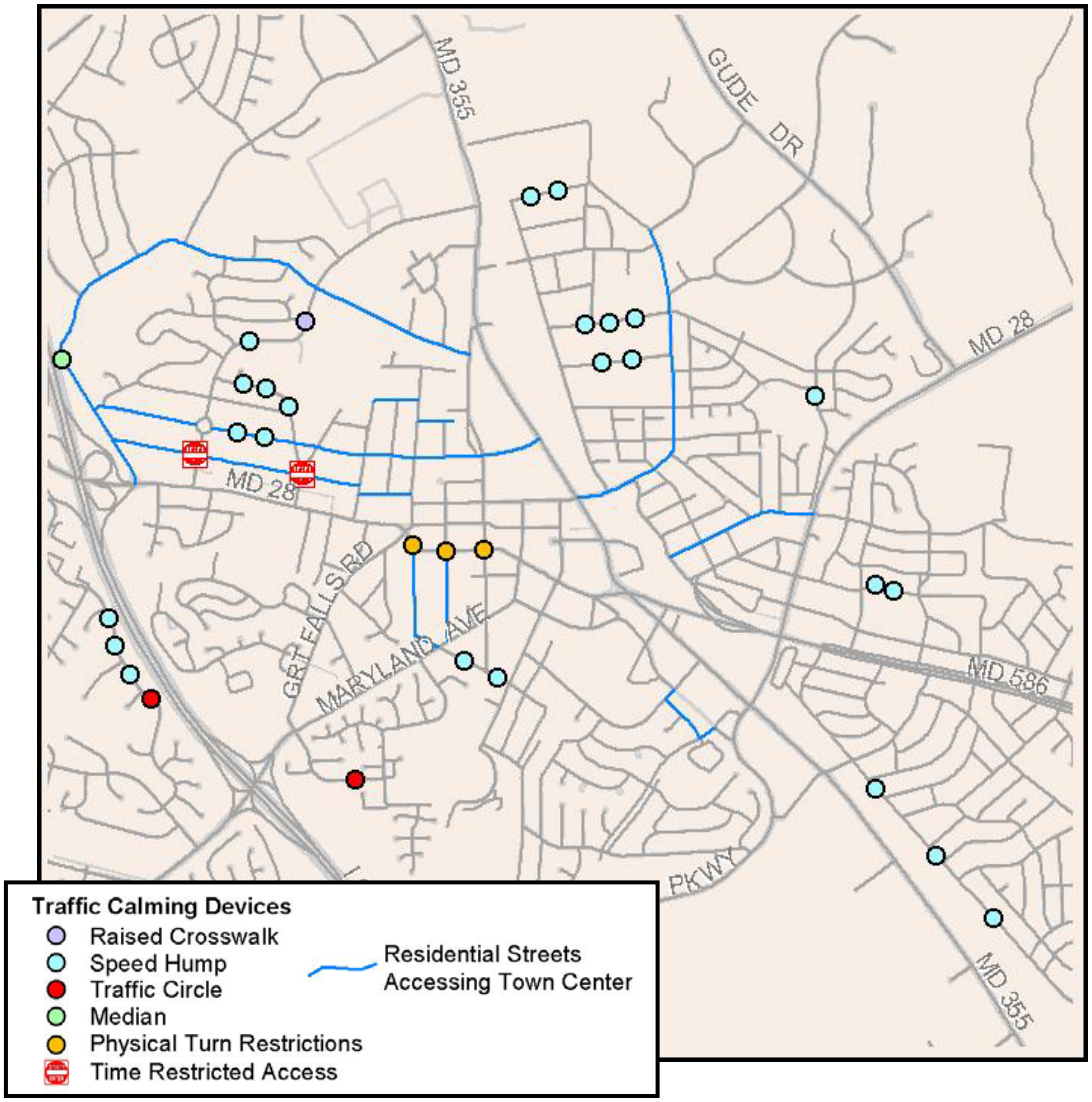


Attachment Q: Maryland Avenue Corridor (Continued)



Traffic Calming

Attachment R: Existing Traffic Calming Locations



Residential Streets Accessing the Town Center (in Blue) with Existing Traffic Calming Devices

Pedestrian Safety (Intersection Ratings)

Attachment S: Pedestrian Rating Poor &Sub-Par

Pedestrian Rating: Poor

* Inadequate Signal Timing
* Unwarranted "Hot Right" Lanes
* Sight Distance Problems

Pedestrian Rating: Sub-Par

* No Pedestrian Walk Signals
* Basic Traffic Infrastructure

Attachment T: Pedestrian Rating Adequate & Good

Pedestrian Rating: Adequate

"Sub-Par" Elements Plus:

Pedestrian Walk Signals

Pedestrian Refuge Islands, Where Possible

Pedestrian Rating: Good

"Adequate" Elements Plus

* Yield to Pedestrians" Signs
* Turn Restrictions
* Hatched Crosswalks

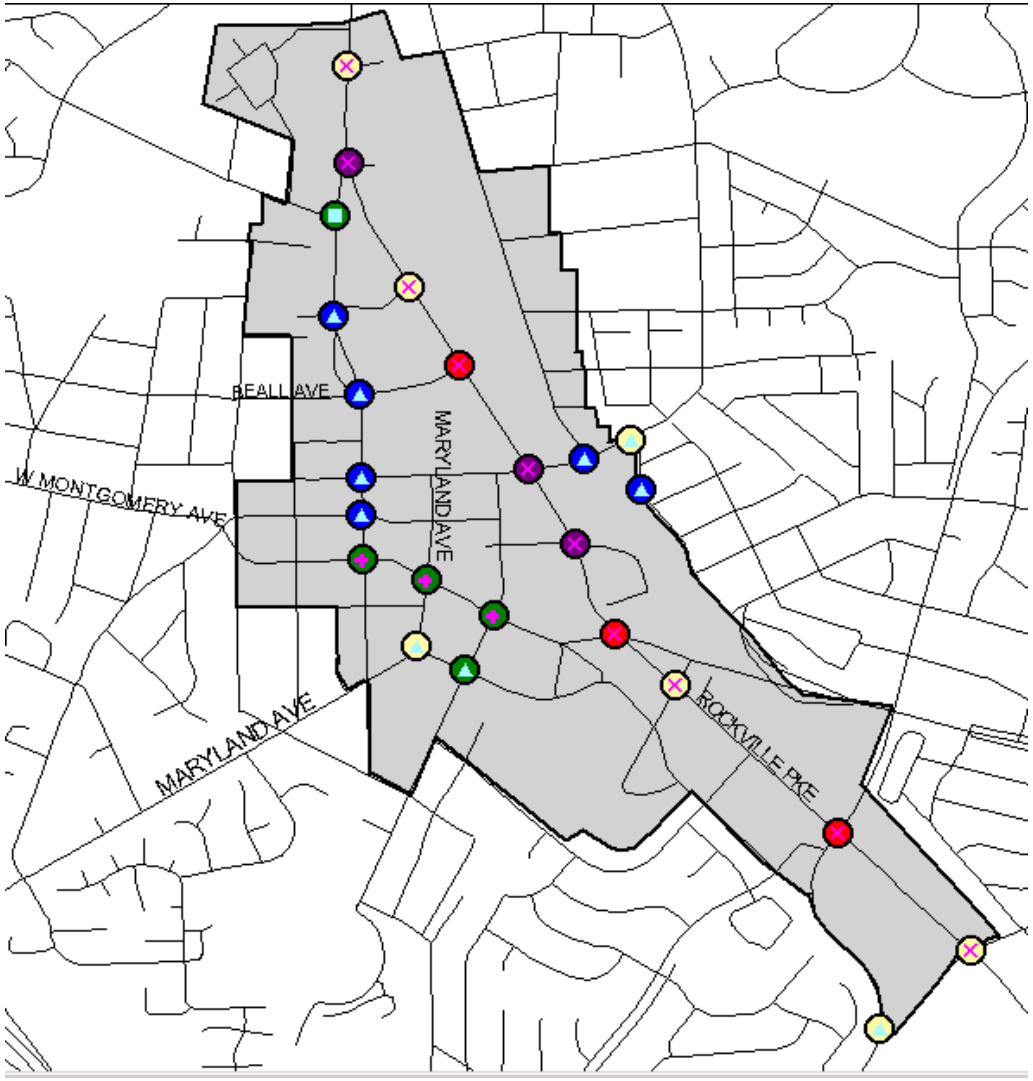
Attachment U: Pedestrian Rating Excellent

Pedestrian Rating: Excellent

"Good" Elements Plus Innovative Treatments Such as:

* Paddle Signs
* Additional Pedestrian Crossing Time
* Illuminated Crosswalks, etc.

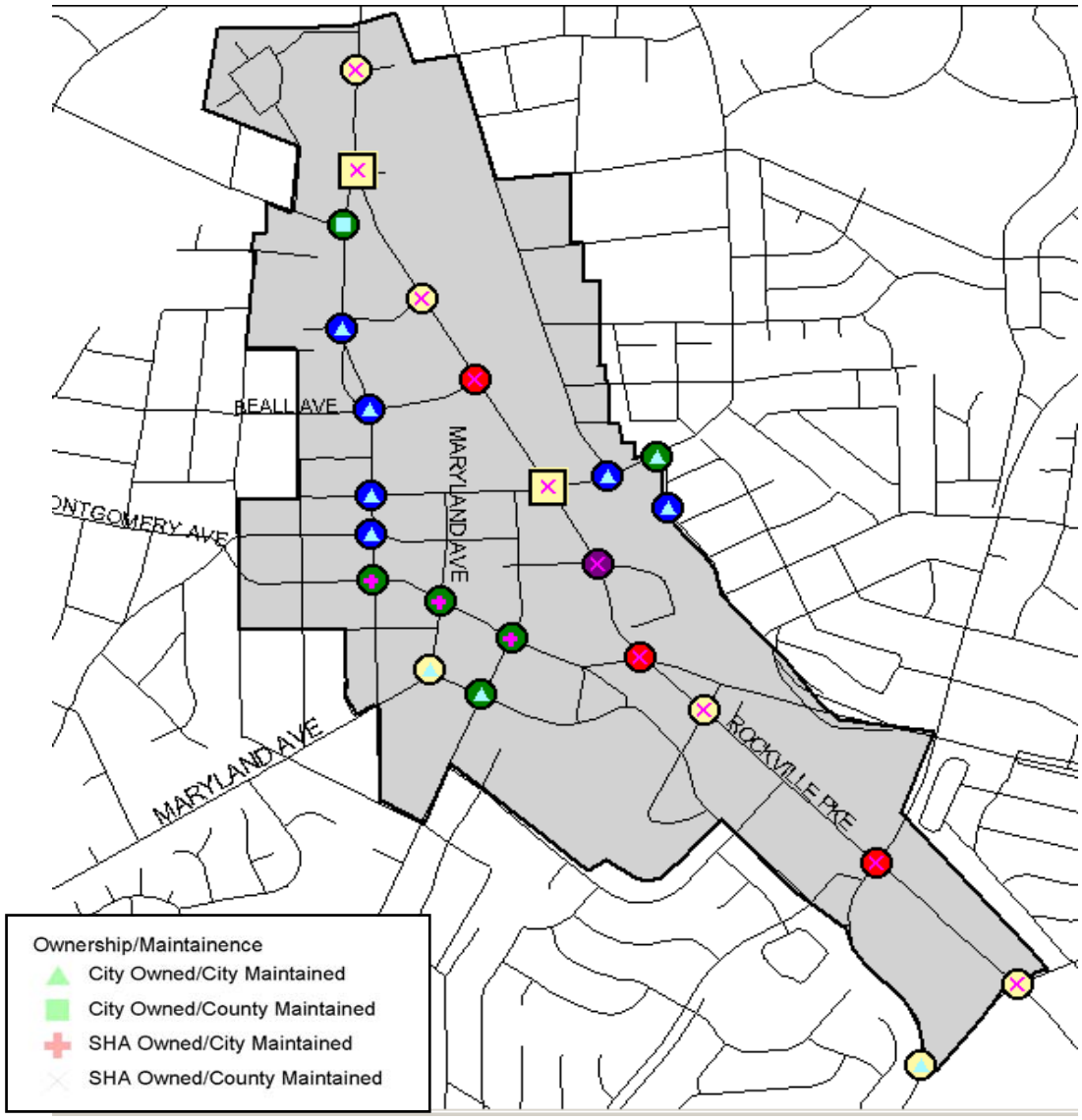
Attachment V: Intersection Safety Ratings (Existing)



Existing

- Excellent
- Good
- Adequate
- Sub-par
- Poor

Attachment W: Intersection Safety Ratings (without FRIT)



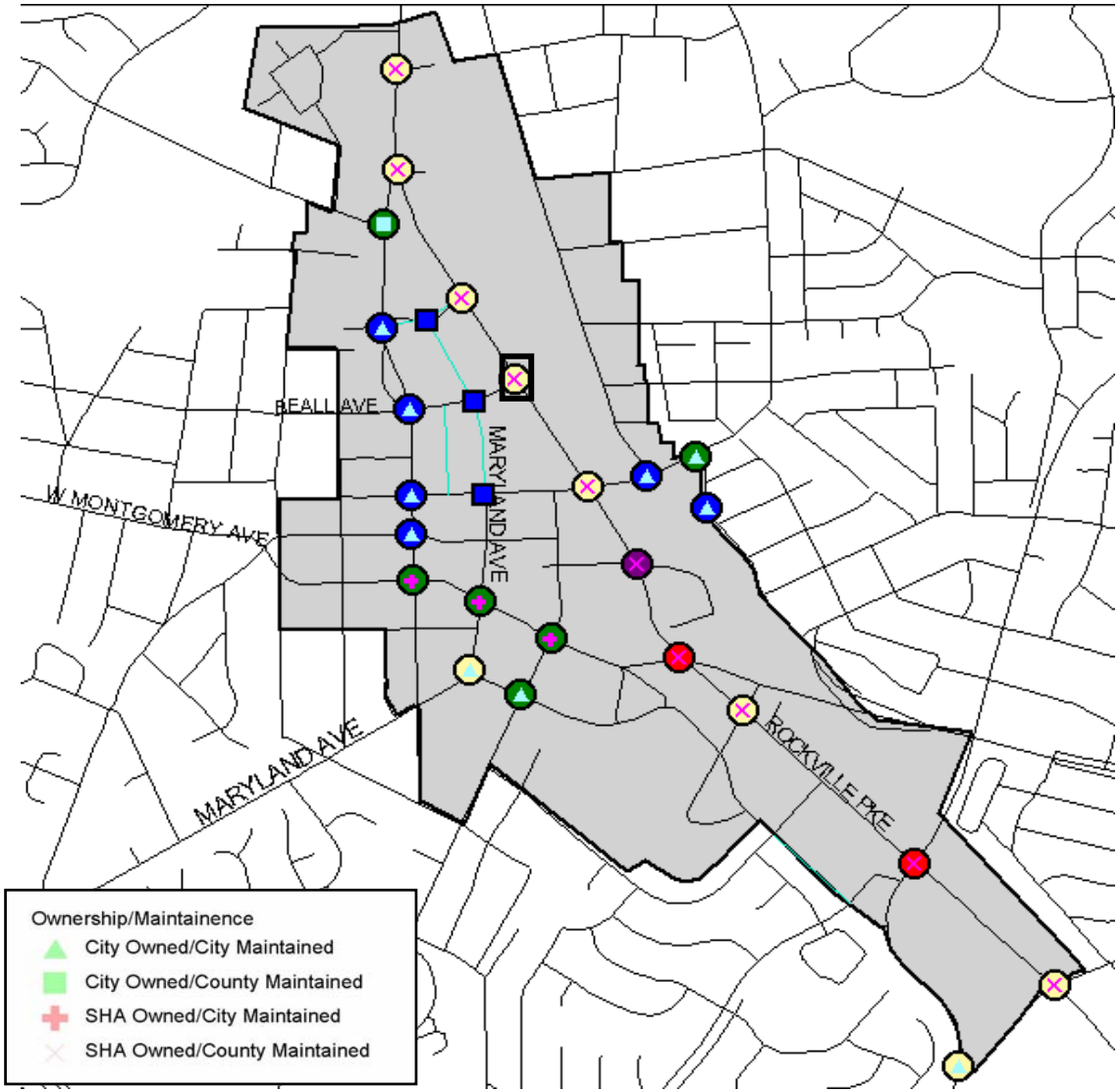
Without FRIT

- Excellent
- Good
- Adequate
- Sub-par
- Poor
- Improved

Improvements:

- *Redesign of MD 355 & N. Washington, near Giant Food Store*
- *Improved signage and striping at MD 355/Middle/Park*

Attachment X: Intersection Safety Ratings (with FRIT)



With FRIT

- Excellent
- Good
- Adequate
- Sub-par
- Poor
- Improved

Improvements:

- *Traffic calming effects nearby make Beall and MD 355 a safer intersection.*
- *Traffic Circle at Maryland Ave. and Dawson*
- *Signal, Crosswalks, and other warranted safety measures at Town Center intersections*

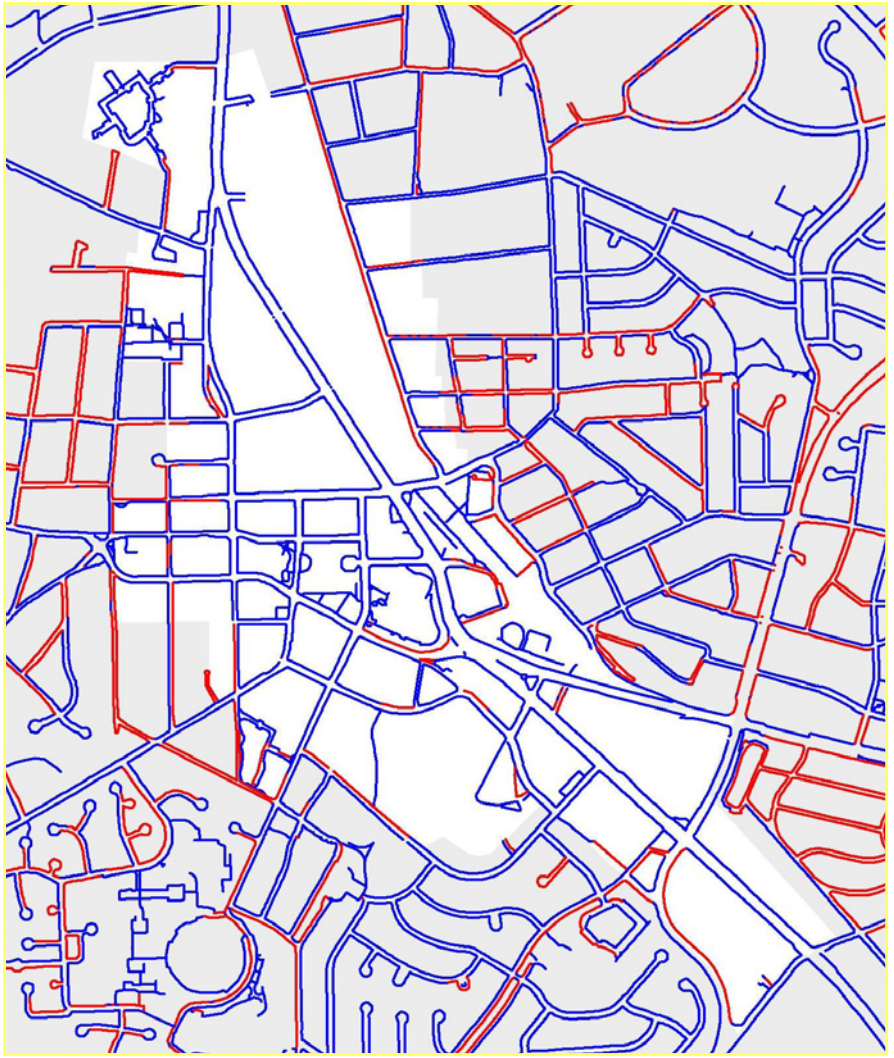
Pedestrian Connections

Attachment Y: Connections from Households to Activity Centers

Measure: Provide Sidewalks
on Both Sides of City Streets

Within the Town Center, 77% of streets have sidewalks on one or both sides.

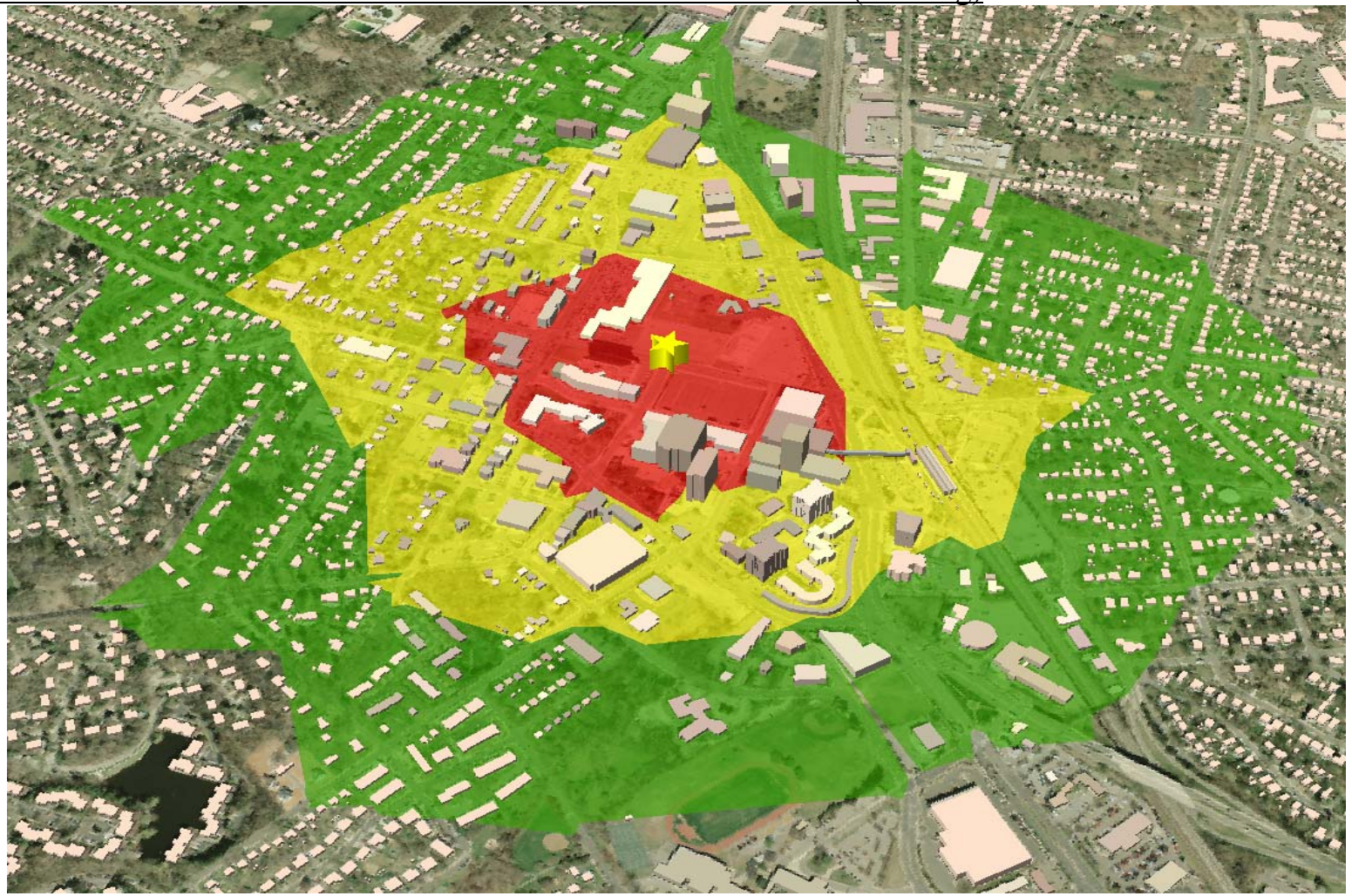
The performance measure (77%) ranks Town Center 10th out of 18 planning areas, sub-par for the amount of activity within a Town Center.



_____ Existing Sidewalks
_____ Missing Sidewalks

Pedestrian Accessibility

Attachment Z: Pedestrian Travel Times to Middle La and MD Ave. (Existing)



- 257 Residential Units are within a **5-minute** walk to the Center of Town Center.
- 1,231 Residential Units are within a **10-minute** walk to the Center of Town Center.
- 2,275 Residential Units are within a **15-minute** walk to the Center of Town Center.

Attachment Z1: Pedestrian Travel Times to Middle La and MD Ave. (w/o FRIT)

- 257 Residential Units are within a **5-minute** walk to the Center of Town Center.
- 1,231 Residential Units are within a **10-minute** walk to the Center of Town Center.

2,495 Residential Units are within a **15-minute** walk to the Center of Town Center.

Attachment Z2: Pedestrian Travel Times to Middle La and MD Ave. (with FRIT)

FRIT buildings are maroon colored.

Orange-colored buildings are FRIT buildings with residential units.

- 916 Residential Units are within a **5-minute** walk to the Center of Town Center.
- 1,901 Residential Units are within a **10-minute** walk to the Center of Town Center.
- 3,105 Residential Units are within a **15-minute** walk to the Center of Town Center.

Attachment Z3: Pedestrian Travel Times to Rockville Metro (Existing)

- 233 Residential Units are within a **5-minute** walk to the Rockville Metro Station.
- 1,212 Residential Units are within a **10-minute** walk to the Rockville Metro Station.
- 2,314 Residential Units are within a **15-minute** walk to the Rockville Metro Station.

Attachment Z4: Pedestrian Travel Times to Rockville Metro (w/o FRIT)

Future approved buildings are blue colored.

Turquoise-colored buildings are approved buildings with residential

- 233 Residential Units are within a **5-minute** walk to the Rockville Metro Station.
- 1,212 Residential Units are within a **10-minute** walk to the Rockville Metro Station.
- 2,547 Residential Units are within a **15-minute** walk to the Rockville Metro Station.

Attachment Z5: Pedestrian Travel Times to Rockville Metro (with FRIT)

FRIT buildings are maroon colored.

Orange-colored buildings are FRIT buildings with residential units.

- 233 Residential Units are within a **5-minute** walk to the Rockville Metro Station.
- 1,873 Residential Units are within a **10-minute** walk to the Rockville Metro Station.
- 2,755 Residential Units are within a **15-minute** walk to the Rockville Metro Station.

Attachment Z6: Pedestrian Travel Times to Rockville Library (Existing)

- 166 Residential Units are within a **5-minute** walk to the Rockville Library.
- 1,372 Residential Units are within a **10-minute** walk to the Rockville Library.
- 2,281 Residential Units are within a **15-minute** walk to the Rockville Library.

•

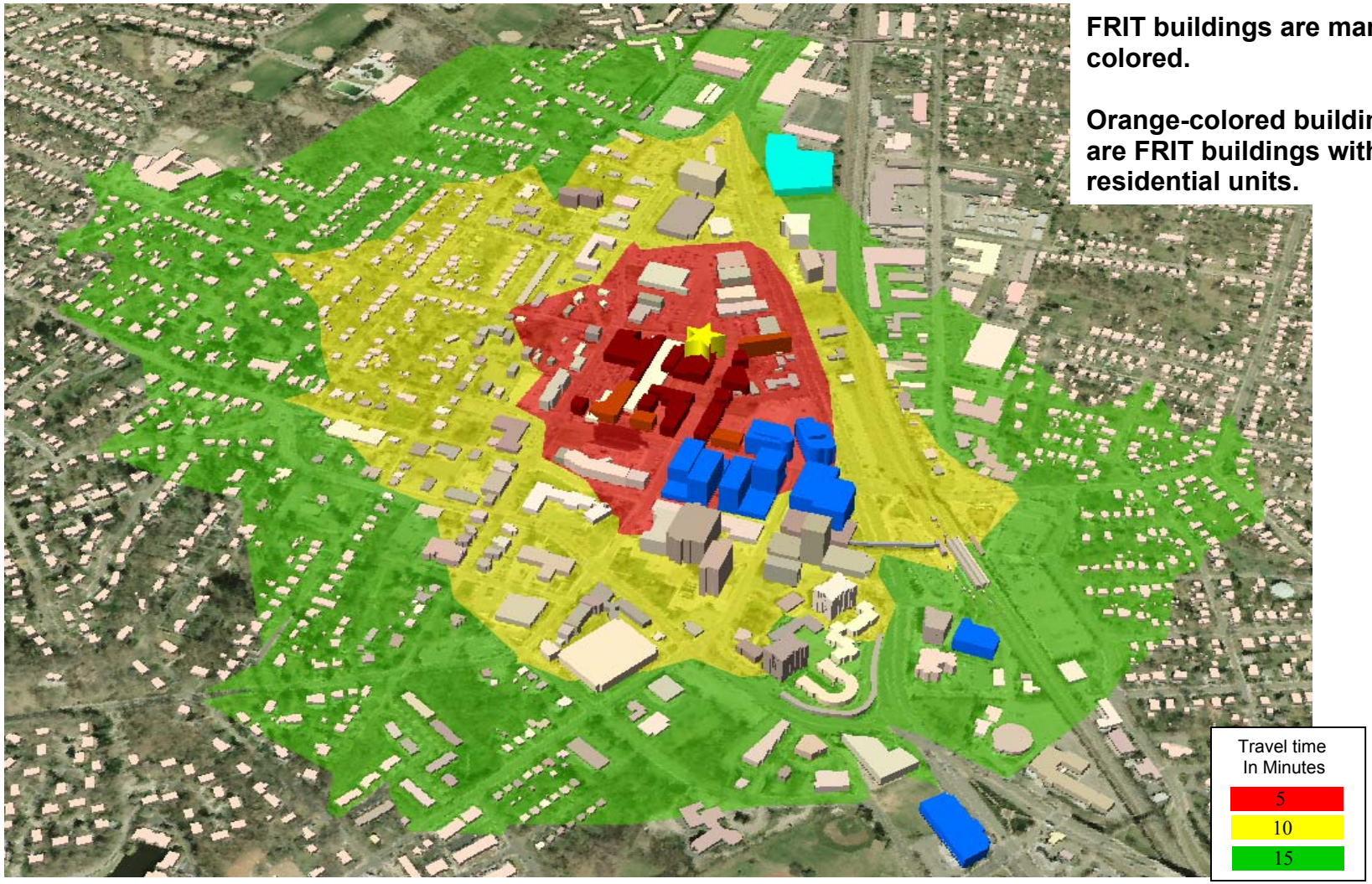
Attachment Z7: Pedestrian Travel Times to Rockville Library (w/o FRIT)

Future approved buildings are blue colored.

Turquoise-colored buildings are approved buildings with residential

- 166 Residential Units are within a **5-minute** walk to the Rockville Library.
- 1,591 Residential Units are within a **10-minute** walk to the Rockville Library.
- 2,665 Residential Units are within a **15-minute** walk to the Rockville Library.

Attachment Z8: Pedestrian Travel Times to Rockville Library (with FRIT)



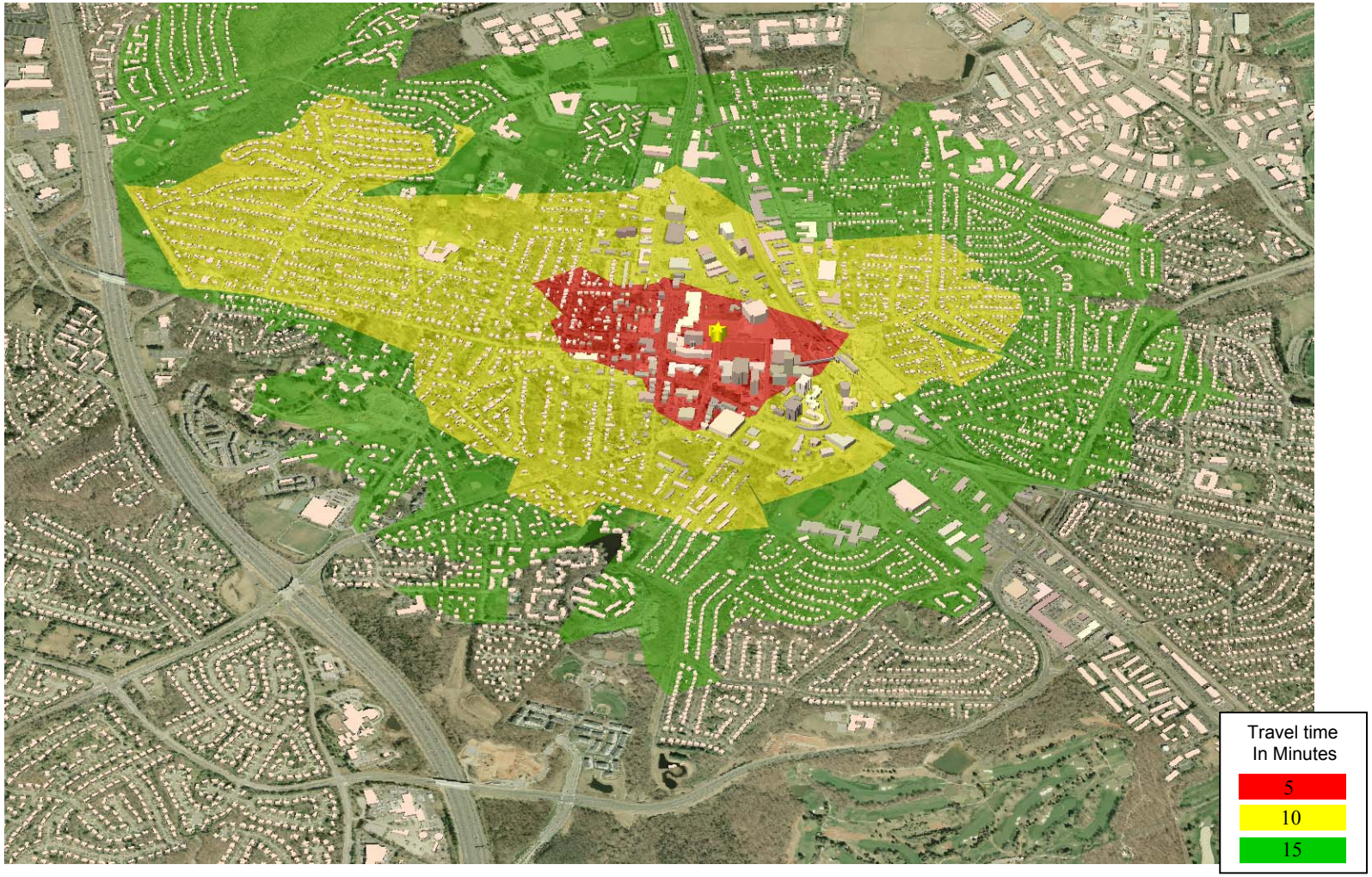
FRIT buildings are maroon colored.

Orange-colored buildings are FRIT buildings with residential units.

- 827 Residential Units are within a **5-minute** walk to the Rockville Library.
- 2,252 Residential Units are within a **10-minute** walk to the Rockville Library.
- 2,913 Residential Units are within a **15-minute** walk to the Rockville Library.

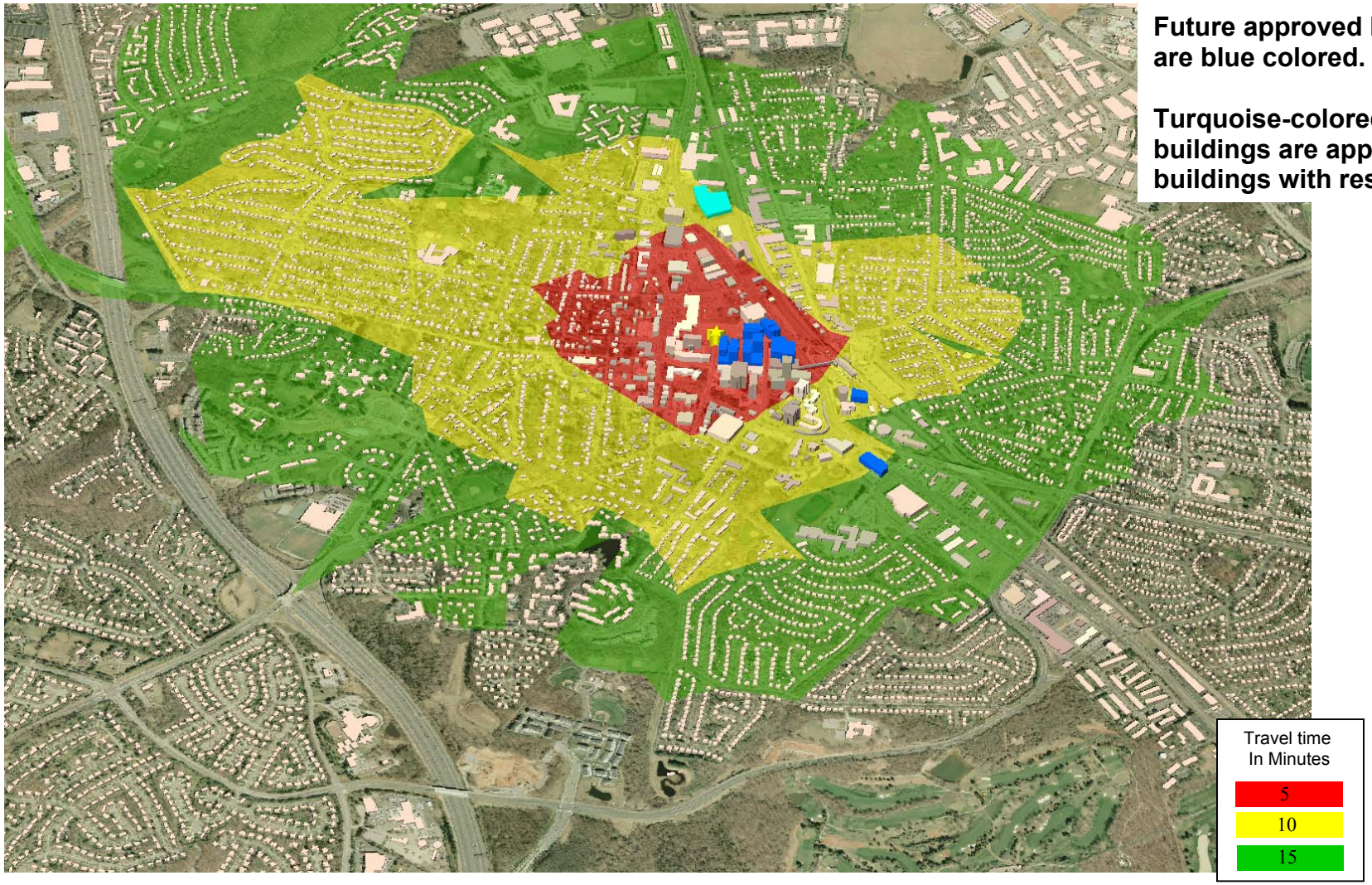
Bicycle Accessibility

Attachment Z9: Bike Travel Times to Middle La and MD Ave. (Existing)



- 327 Residential Units are within a **5-minute** bike to the Center of Town Center.
- 2,997 Residential Units are within a **10-minute** bike to the Center of Town Center.
- 6,242 Residential Units are within a **15-minute** bike to the Center of Town Center.

Attachment Z10: Bike Travel Times to Middle La and MD Ave. (w/o FRIT)

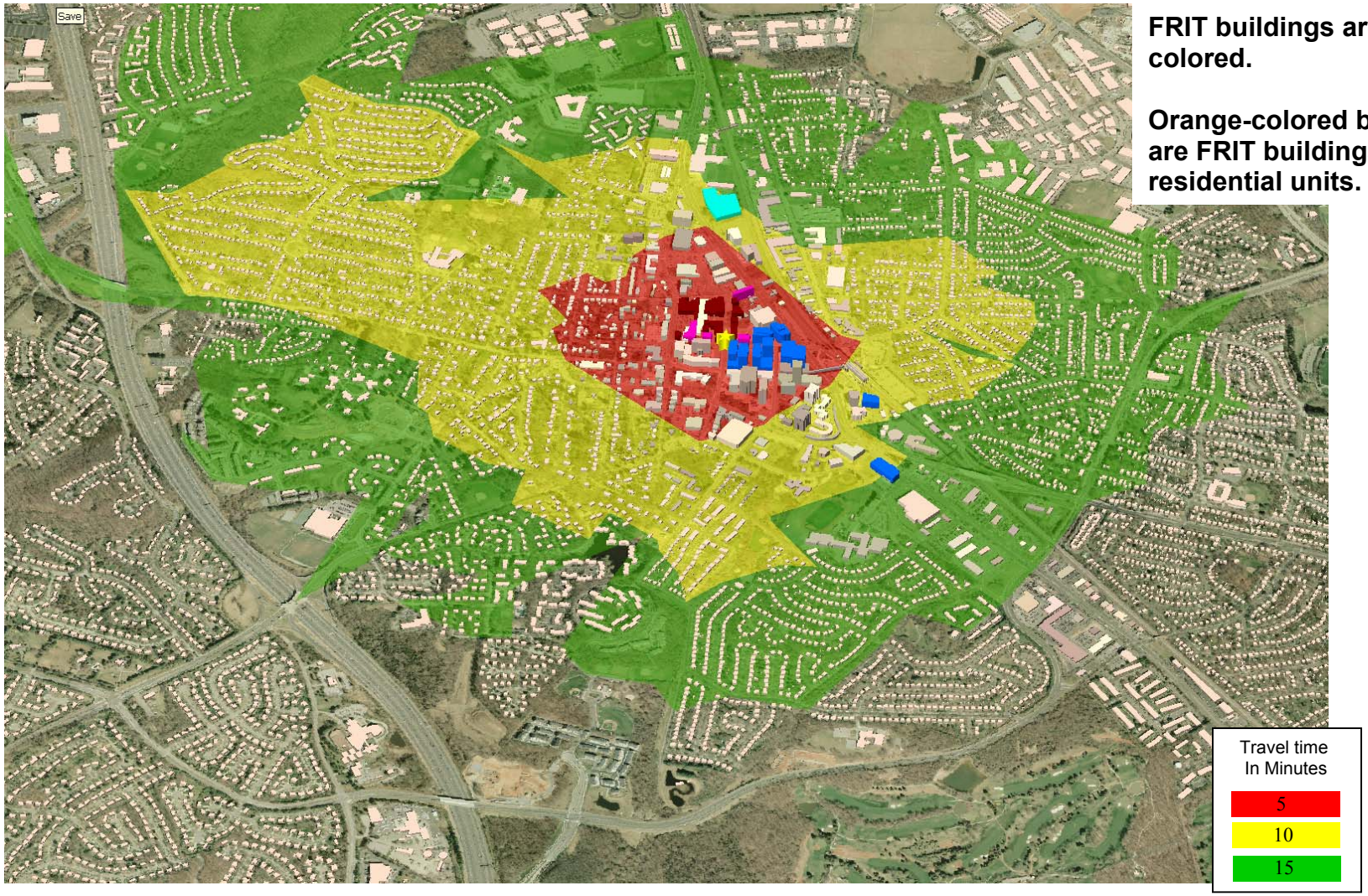


Future approved buildings are blue colored.

Turquoise-colored buildings are approved buildings with residential

- 664 Residential Units are within a **5-minute** bike to the Center of Town Center.
- 3,642 Residential Units are within a **10-minute** bike to the Center of Town Center.
- 7,068 Residential Units are within a **15-minute** bike to the Center of Town Center.

Attachment Z11: Bike Travel Times to Middle La and MD Ave. (with FRIT)

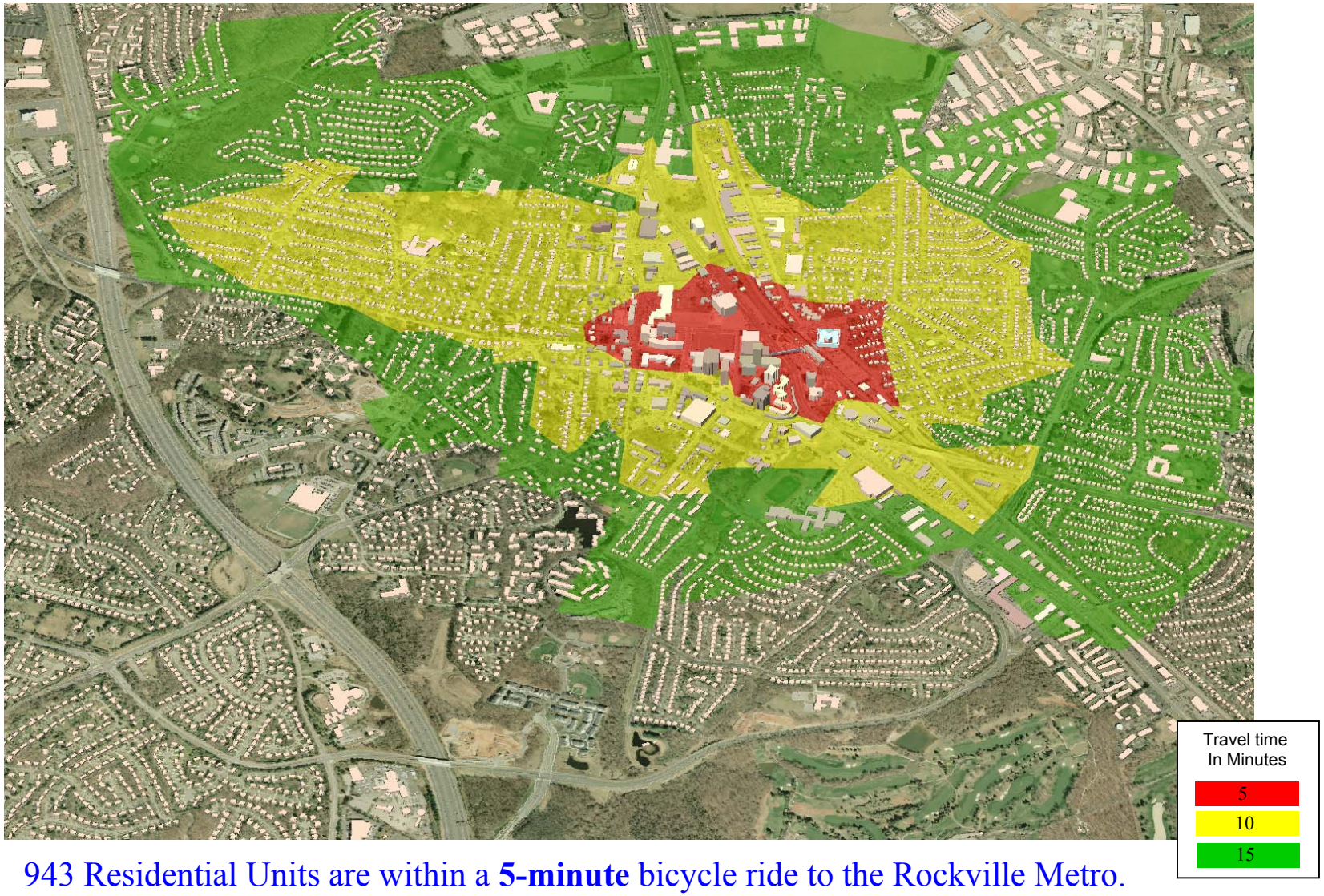


FRIT buildings are maroon colored.

Orange-colored buildings are FRIT buildings with residential units.

- 1,305 Residential Units are within a **5-minute** bike to the Center of Town Center.
- 4,357 Residential Units are within a **10-minute** bike to the Center of Town Center.
- 7,818 Residential Units are within a **15-minute** bike ride to the Center of Town Center.

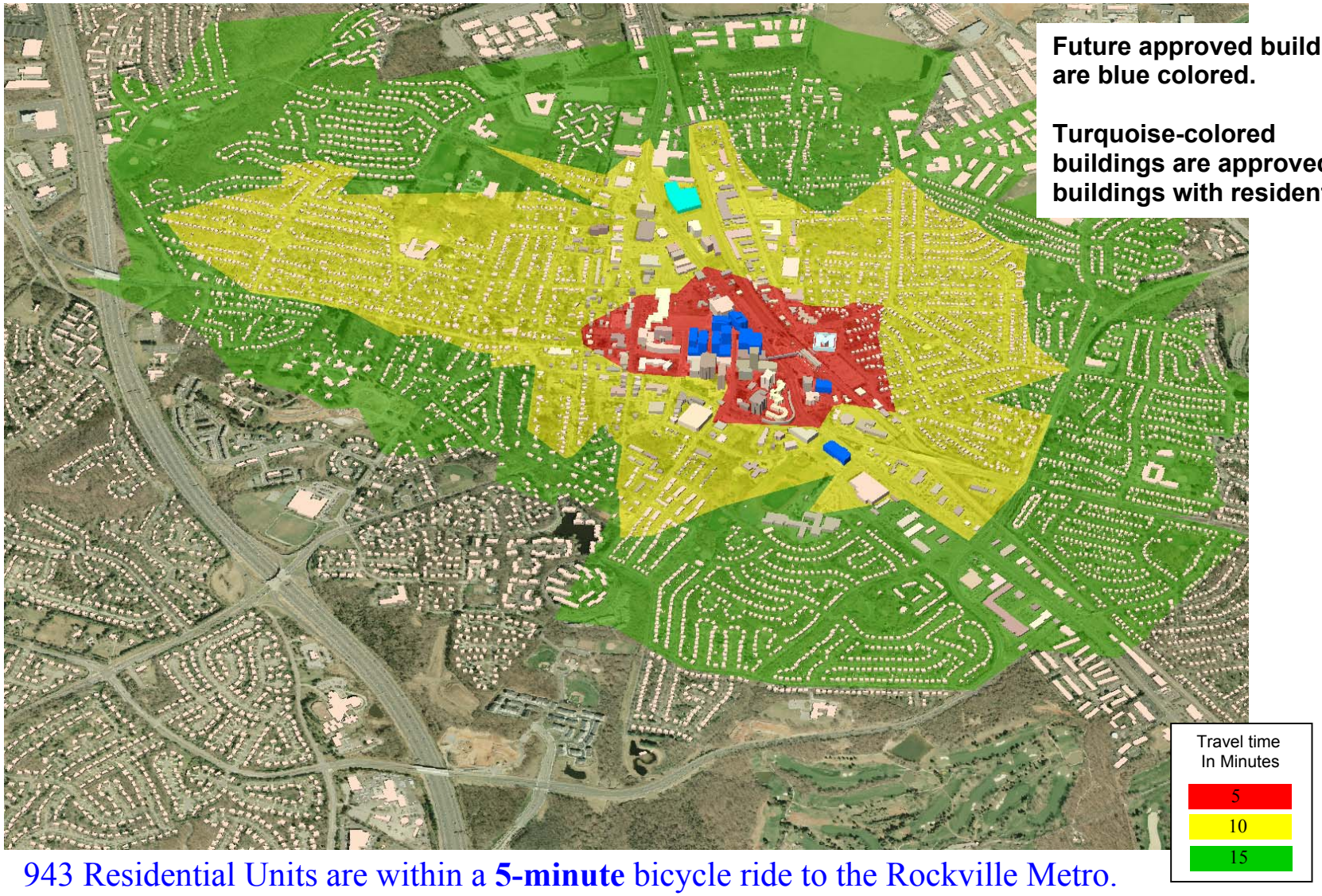
Attachment Z12: Bike Travel Times to Rockville Metro (Existing)



- 943 Residential Units are within a **5-minute** bicycle ride to the Rockville Metro.
- 2,965 Residential Units are within a **10-minute** bicycle ride to the Rockville Metro.
- 6,460 Residential Units are within a **15-minute** bicycle ride to the Rockville Metro.

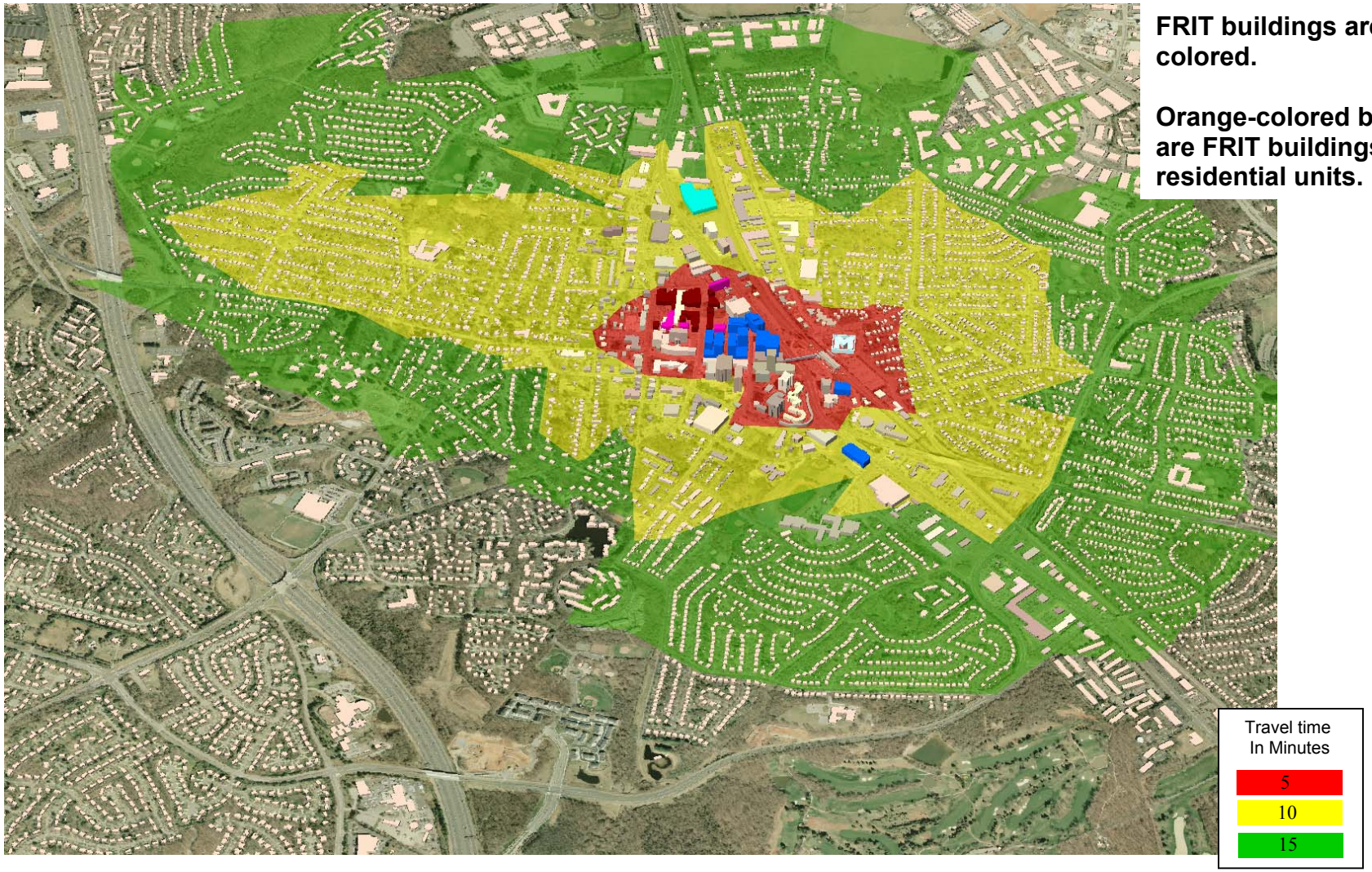
City of Rockville, MD. Town Center Transportation Analysis.
Department of Public Works, Traffic and Transportation Division. May 15, 2003.

Attachment Z13: Bike Travel Times to Rockville Metro (w/o FRIT)



- 943 Residential Units are within a **5-minute** bicycle ride to the Rockville Metro.
- 3,362 Residential Units are within a **10-minute** bicycle ride to the Rockville Metro.
- 6,681 Residential Units are within a **15-minute** bicycle ride to the Rockville Metro.

Attachment Z14: Bike Travel Times to Rockville Metro (with FRIT)

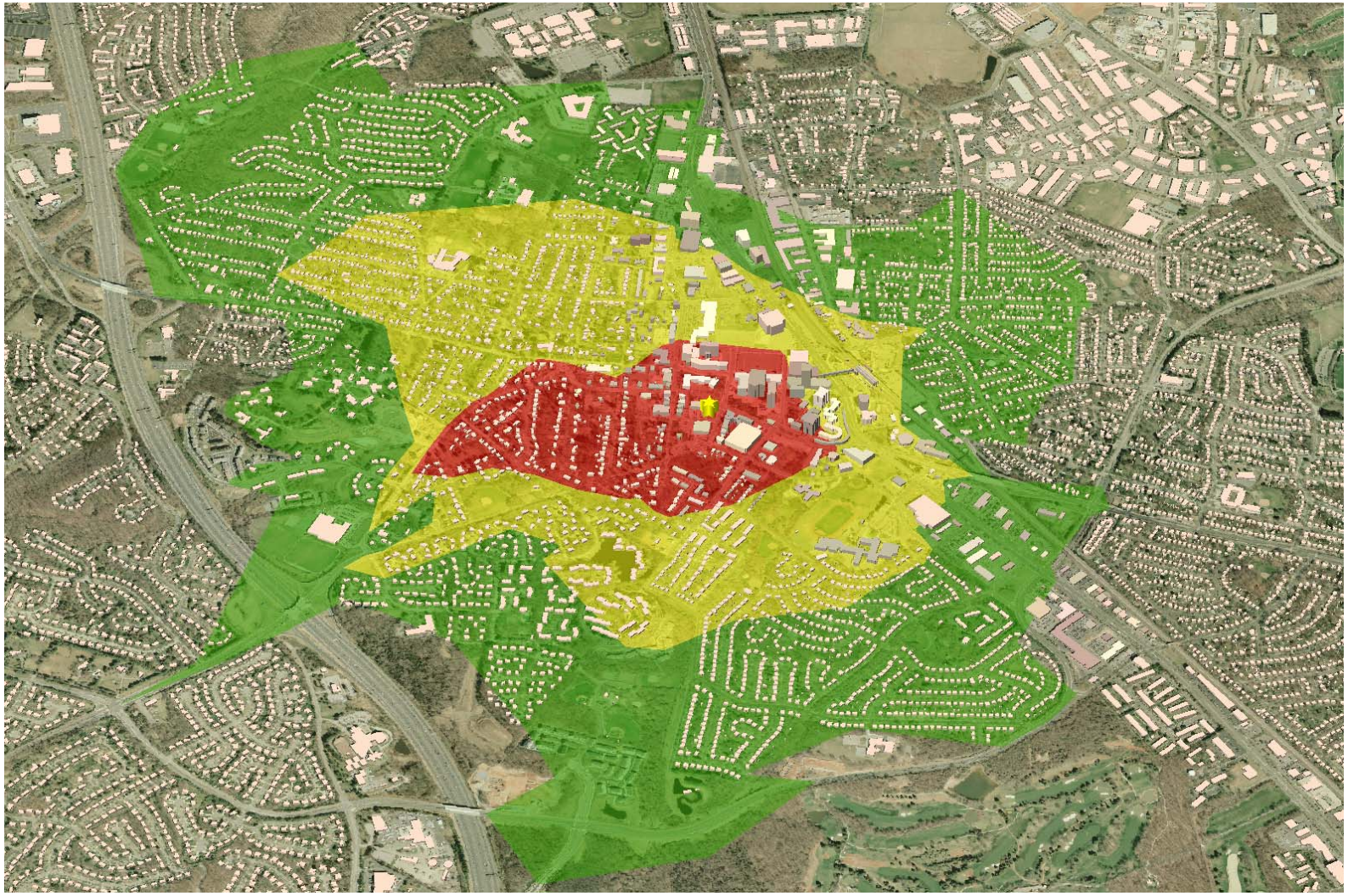


FRIT buildings are maroon colored.

Orange-colored buildings are FRIT buildings with residential units.

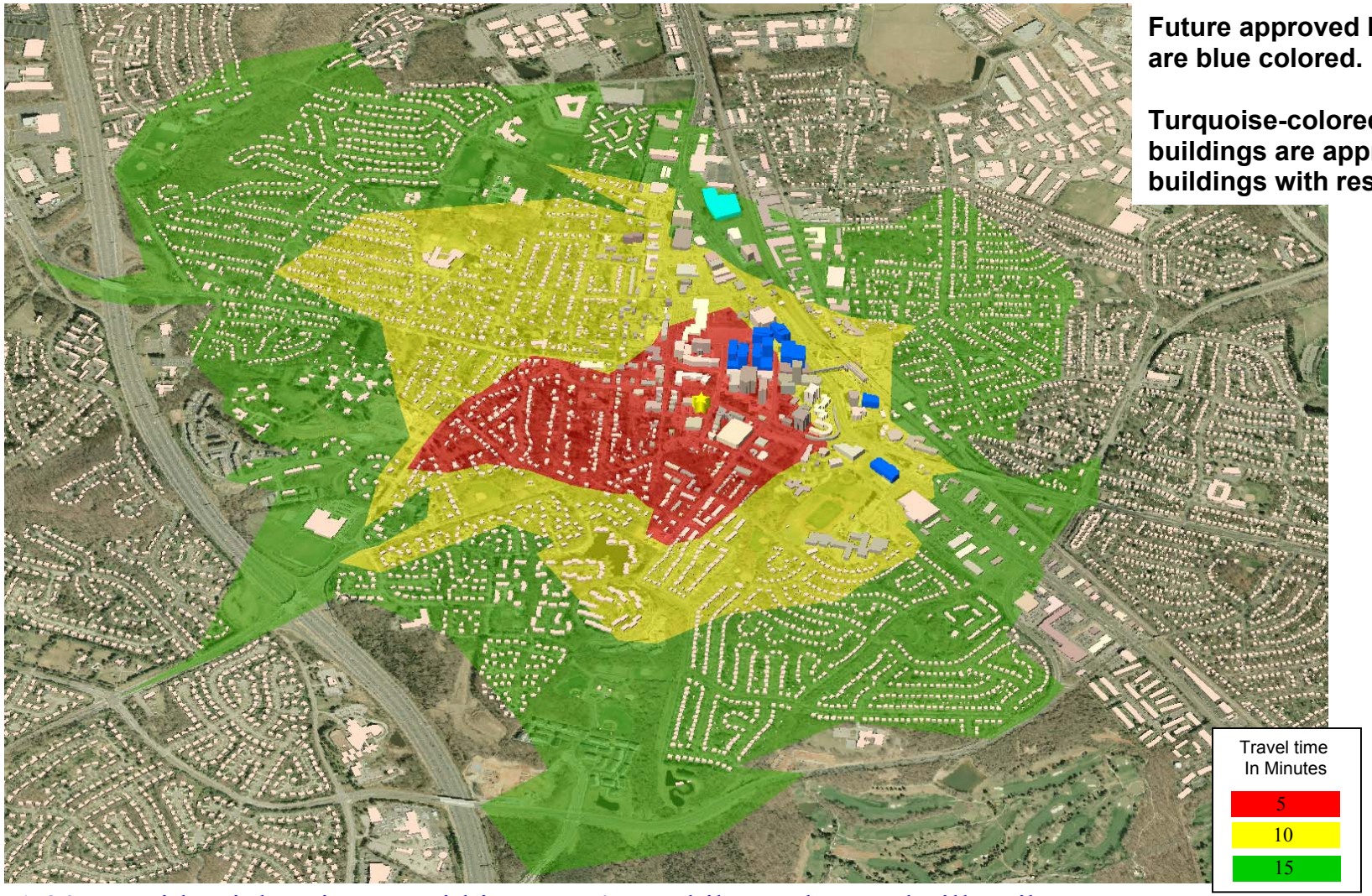
- 1,604 Residential Units are within a **5-minute** bicycle ride to the Rockville Metro.
- 4,023 Residential Units are within a **10-minute** bicycle ride to the Rockville Metro.
- 7,342 Residential Units are within a **15-minute** bicycle ride to the Rockville Metro.

Attachment Z15: Bike Travel Times to Rockville Library (Existing)



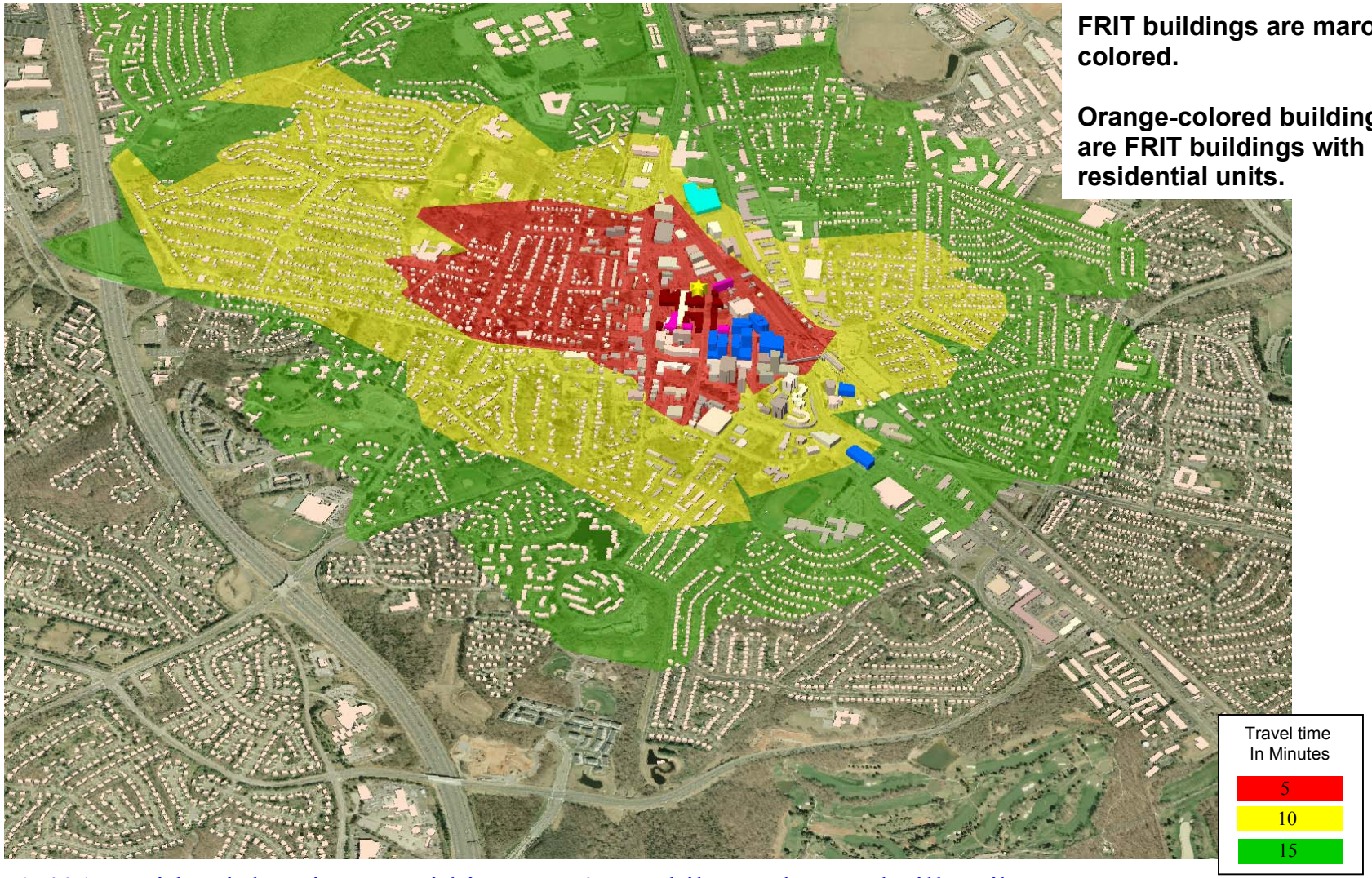
- 1,032 Residential Units are within a **5-minute** bike to the Rockville Library.
- 2,907 Residential Units are within a **10-minute** bike ride to the Rockville Library.
- 5,779 Residential Units are within a **15-minute** bike ride to the Rockville Library.

Attachment Z16: Bike Travel Times to Rockville Library (w/o FRIT)



- 1,207 Residential Units are within a **5-minute** bike to the Rockville Library.
- 2,948 Residential Units are within a **10-minute** bike ride to the Rockville Library.
- 6,076 Residential Units are within a **15-minute** bike ride to the Rockville Library

Attachment Z17: Bike Travel Times to Rockville Library (with FRIT)



FRIT buildings are maroon colored.

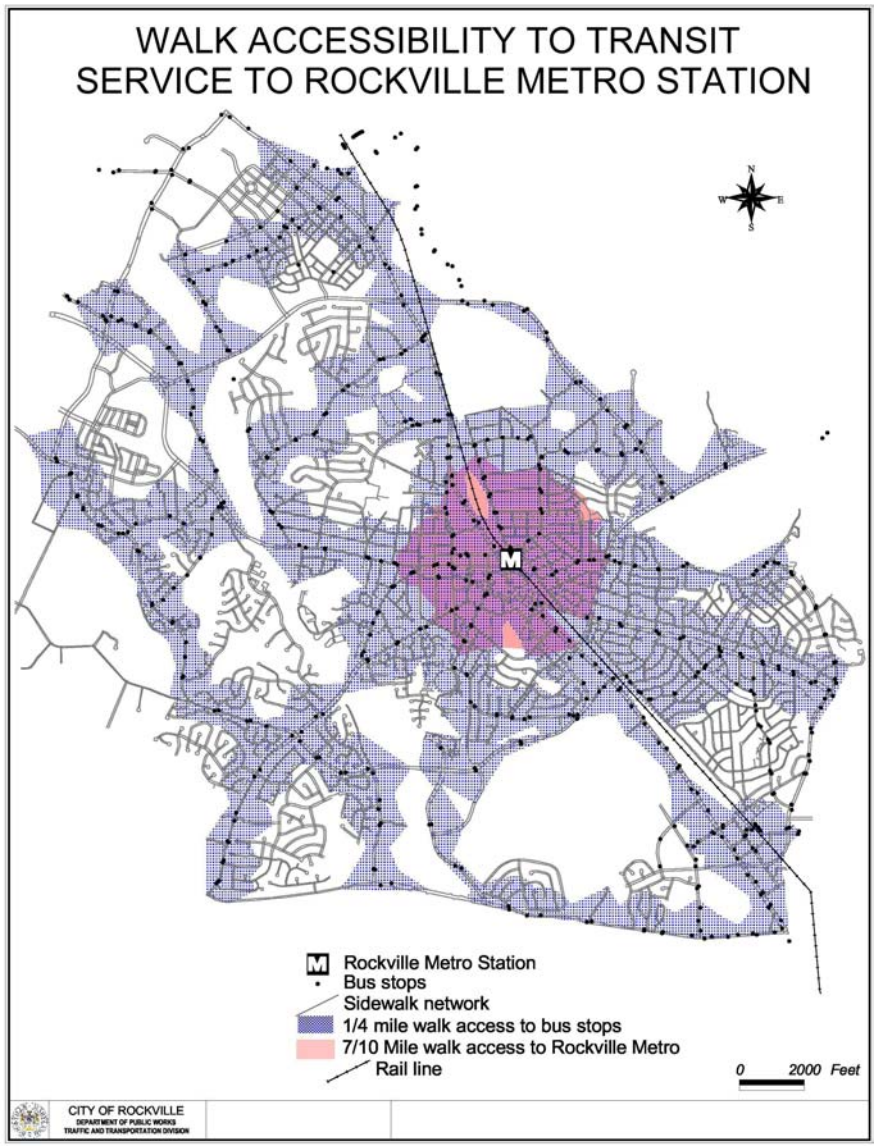
Orange-colored buildings are FRIT buildings with residential units.

- 1,401 Residential Units are within a **5-minute** bike to the Rockville Library.
- 4,110 Residential Units are within a **10-minute** bike ride to the Rockville Library.
- 7,660 Residential Units are within a **15-minute** bike ride to the Rockville Library.

Transit Accessibility

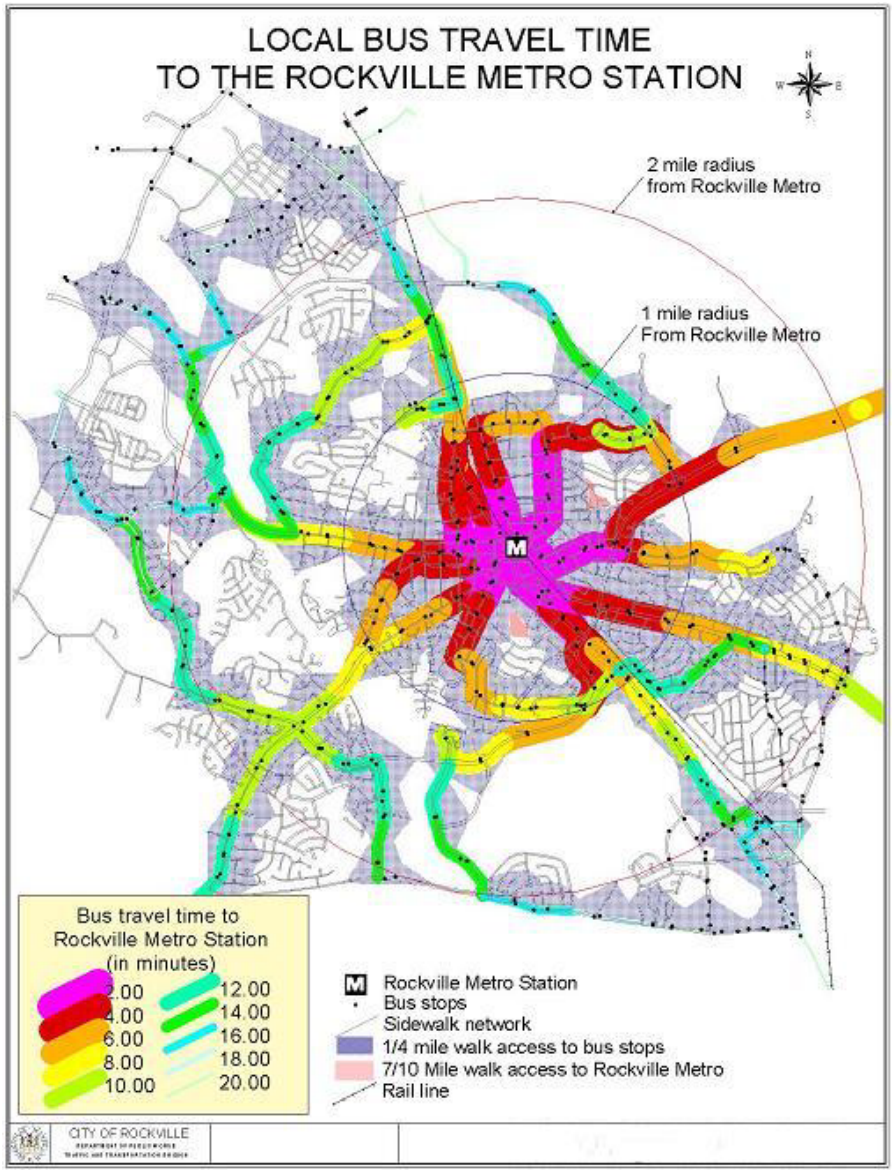
Attachment Z18: Actual Walksheds to Transit Stations

Goal: Maximize Pedestrian Access to Transit



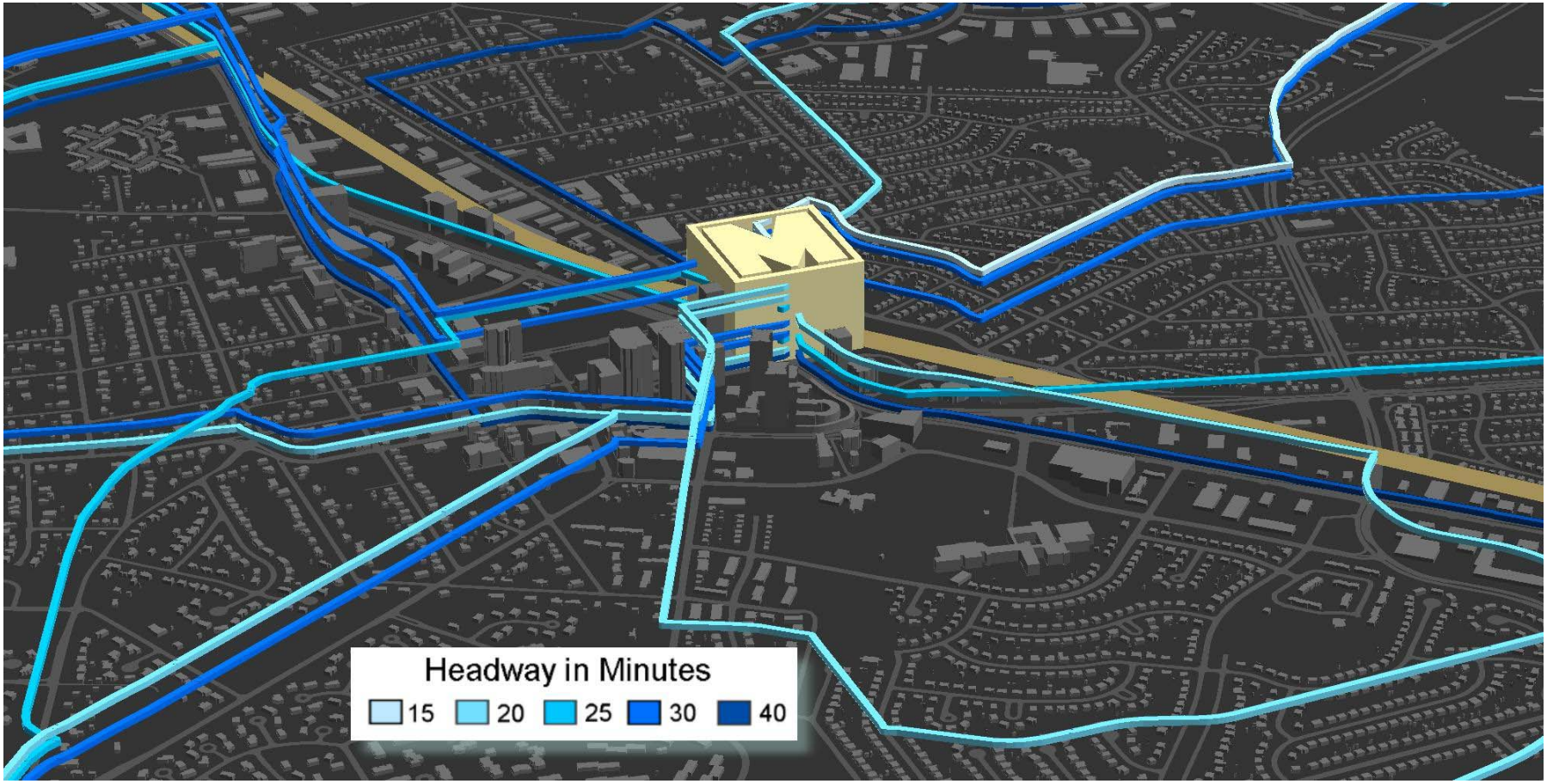
Attachment Z19: Local Bus Travel Times to Rockville Metro

Goal:
Improve
Local Bus
Access to
Metrorail Stations



City of Rockville, MD. Town Center Transportation Analysis.
Department of Public Works, Traffic and Transportation Division. May 15, 2003.

Attachment Z20: Transit Frequency of Service



Goal: Maximize Transit Frequency

Attachment Z21: TDM Program

Transportation Demand Management Program for Rockville Town Center Redevelopment

The goal for FRIT project is to achieve a reduction of 100% of the single-occupancy vehicle trips by employees and residents. In order to achieve this goal, the City has designed a comprehensive program that addresses Transportation Demand Management (TDM), land use, and urban design. The program supports development of pedestrian, bicycle, transit, and carpool/vanpool facilities for accessing the Town Center activity area and other transit-oriented areas.

Transportation Demand Management
To encourage and facilitate reductions in single-occupancy vehicle trips, the City will establish a TDM Program for this redevelopment project, which will serve as a template for future redevelopments in the City. Key elements of the Rockville Town Center TDM Program will include:

- Transit subsidies for employees
- Ride-sharing programs for residents and employees, with parking preferences for carpools and vanpools
- Bicycle facilities located in or abutting parking garages, at residential properties, and in prominent locations in retail areas
- Real-time transit information at bus shelters
- A Rockville Regional Transportation Center at the Rockville Metrorail Station (with redevelopment of WMATA site)
- Reduction of trips through pedestrian and transit-oriented urban design and mixed land uses
- Financial participation by developers in the City's TDM program that will include payment of ten cents / square foot / year for ten years for commercial properties, and $60 per year for all multi-family dwelling units (MPDUs are exempt).

Land Use
Existing land uses in Rockville Town Center will change so that suburban-style shopping areas with vast surface parking facilities will be replaced with a mixed-use activity center. This redevelopment will create an active and vibrant urban center that mitigates demand for additional auto trips. For example, there will be a town square adjacent to the library which will be a natural meeting space for civic events and will create an attractive, active pedestrian-oriented urban center that eliminates the need to drive between these places.

A compatible combination of residential, office and retail land uses in a pedestrian-friendly location will reduce walking distances and provide convenient access to transit, retail, and government facilities. Increased access to facilities will reduce a large amount of peak-hour trips generated from external sites due to the convenience and safety of mixed-use and active areas. Town Center will be a place with multiple destinations within close proximity, where the streets and sidewalks balance all forms of transportation.

Urban Design
Existing urban design in Town Center is oriented to continual increases in auto trips. Physical definitions of streets are prominent in retail areas, and pedestrian and bicycle facilities are often seen as dangerous and not inviting.

The redevelopment design establishes a street grid with pedestrian-scale blocks and pedestrian-friendly intersections within walking distance of the Metrorail. While autos will be accommodated, they will be buffered so that pedestrian and bicycle spaces are respected. On-street parking will shield pedestrians from autos, slow traffic, and provide more human-scaled local streets. All intersections in the Town Center are designed to have curb extensions to decrease distances pedestrians must travel to cross streets. This will encourage an active and lively urban atmosphere with easy access to multiple modes of transportation.

Pedestrian/Bicycle Facilities
As the City of Rockville has been requiring of all new development in the City, all sites in Town Center must be accessible by all modes in order to decrease single-occupancy vehicle trips. Bicycle and pedestrian facilities are a key element in the design of Town Center, connecting neighborhoods, transit and activity centers. Public rights of way will be designed to accommodate all modes of transportation, including 20-foot wide sidewalks for shared pedestrian and bicycle use, bicycle racks and lockers throughout Town Center.

The new Market Street will have an exclusive designated bicycle facility, and the Maryland Avenue extension will be bicycle friendly. Additional facilities will be implemented on connecting streets to create direct connections from surrounding neighborhoods.

Transit Facilities
Transit facilities will be incorporated in the Town Center design and will encourage transit use. These facilities include real-time transit information at select bus shelters, bus pull-offs conveniently located near activity centers, and additional bus shelters. Transit subsidies will encourage transit use by citizens and employees of Rockville.

Summary
Existing conditions in Town Center do not encourage the mitigation of single-occupancy vehicle trips. A multi-modal approach will be taken to minimize such trips to and from Town Center. Land use and urban design features will promote a walkable and bicycle-friendly community. A mix of commercial office, retail and restaurant, and residential uses will be designed in a grid system to provide access and connectivity to the Town Center. Decreased travel time via transit, walking, and biking will make these modes easier and more appealing. An example of this includes the Maryland Avenue (extended) project, wherein 40 of 78 feet of right-of-way from building face to building face will be used for sidewalks, tree lawns, and outdoor cafes. More public right-of-way will be used for pedestrian, bike, and transit circulation than for autos. This redevelopment aims to increase the desire and need of employees, residents, and visitors to use multiple modes of transportation and mitigate single-occupancy vehicle trips to and from Town Center.